

PROCEEDINGS OF THE
LIBRARY ASSESSMENT CONFERENCE

BUILDING EFFECTIVE, SUSTAINABLE, PRACTICAL ASSESSMENT

SEPTEMBER 25–27, 2006

CHARLOTTESVILLE, VIRGINIA

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Conference Overview

The Library Assessment Conference: Building Effective, Sustainable, Practical Assessment took place from September 25-27, 2006, in historic Charlottesville, Virginia. Charlottesville is a fitting location for this first assessment conference as it is the birthplace of Thomas Jefferson, the founder of the Library of Congress, as well as one of our co-sponsoring institutions, University of Virginia. When Jefferson donated his books to the Library of Congress, he wrote “I ask of your friendship, therefore, to make for me the tender of it to the Library Committee of Congress, not knowing myself of whom the Committee consists.” In a similar fashion, we asked for the support and ‘friendship’ of the library community to turn the library assessment effort into a successful event.

There was overwhelming response to the Conference, the first library assessment conference in North America. Demand was so high that registration closed early and many who wanted to attend could not—ample evidence of the growing community awareness regarding the value of library assessment. More than 200 people participated in a rich three day program of workshops, tours, engaging plenary speakers, useful concurrent and poster sessions, and many opportunities for informal discussion. The conference focused on practical assessment that can be used to improve library service, and included sessions on assessment methods and techniques, measuring customer satisfaction, learning outcomes, organizational climate surveys, developing performance metrics, assessing library as place, measuring the value and impact of libraries, evaluating electronic services and resources, and other related areas.

We view participants’ commitment to library assessment as critical to the process of demonstrating the impact and connection of the library to the research, teaching, and learning process. A library assessment program can only be as strong as our own ability to learn and adapt to the new challenges confronting our organizations. Our goal has been to establish a library assessment community that serves as a catalyst and supports library organizations in addressing these challenges.

As the ancient saying goes ‘the wisest of the wise may err’ (Aeschylus) and this learning community of practitioners aspires to be the ‘wisest of the wise.’ In this volume, a learning community interested in library assessment presents the outcomes of their work that took place in a wonderful atmosphere of learning, community building, and fun sharing activities.

Outcomes of the Library Assessment Conference beyond the conference itself and the published proceedings include:

- Library Assessment Forum—A community gathering organized by the Association of Research Libraries that takes place twice a year in conjunction with the American Libraries Association meetings (usually held on Fridays from 1:30pm to 3:00pm). Information on the Forum can be found at: <http://www.arl.org/stats/statsevents/laforum/index.shtml>.
- Library Assessment Blog—Post-conference discussion on library assessment issues takes place in the Library Assessment Blog. Discussion focuses on activities that seek to measure the library’s impact on teaching, learning, and research, as well as initiatives that seek to identify user needs or gauge user perceptions or satisfaction. The overall goal of these discussions is the data-based and user-centered continuous improvement of our collections and services. For

- more information or to join, go to <http://libraryassessment.info>.
- ARL-ASSESS E-mail List—This e-mail list is a communication mechanism for those individuals interested in ARL's work to support a learning community of people interested in assessment. For more information or to join, go to <https://mx2.arl.org/Lists/ARL-ASSESS/List.html>.
- Building "Effective, Sustainable, and Practical Library Assessment"—With the assistance of Visiting Program Officers Steve Hiller (University of Washington) and Jim Self (University of Virginia), ARL established a service for helping libraries develop effective, sustainable, and practical assessment activities. The service involves a site visit to each participating library, a report to each library with recommendations on practical and sustainable assessment, and follow-up assistance in implementing the recommendations. For more information, go to <http://www.arl.org/stats/initiatives/esp/index.shtml>.
- Service Quality Evaluation Academy—The Service Quality Evaluation Academy, originally established as an outcome from the widespread success of LibQUAL+®, addresses a community-wide need for new strategies and methods of library assessment by pursuing the following goals: (1) enhance the pool of librarians with advanced assessment skills by teaching quantitative and qualitative methods for assessing and improving outcomes and service quality; (2) create an infrastructure for libraries to design and develop outcomes-based library assessment programs; and (3) build capacity for assessment through advocating its use and providing model programs and projects to the broader library and museum communities. For more information, go to <http://www.arl.org/stats/statsevents/sqacademy/index.shtml>.
- A second Library Assessment Conference scheduled to take place on August 4-6, 2008, at the University of Washington. Program information for the Library Assessment Conference may be found online at <http://www.arl.org/stats/statsevents/laconf/index.shtml>.

We look forward to seeing the community gather together again in Seattle in 2008.

Best regards,

Steve Hiller, University of Washington, Conference Co-Chair

Martha Kyrillidou, Association of Research Libraries, Conference Co-Chair

Jim Self, University of Virginia, Conference Co-Chair

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Announcement

2008 Library Assessment Conference

The Association of Research Libraries, the University of Virginia Library, and the University of Washington Libraries are once again pleased to announce that the next Library Assessment Conference will be held August 4-6, 2008, at the University of Washington's Seattle, WA, Campus.

The Call for Papers will be in October 2007.

Forthcoming information available at: <http://www.arl.org/stats/statsevents/laconf/>.

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Library Assessment: Demonstrating Value-Added in a Time of Constrained Resources and Unique Opportunities

Duane E. Webster

Executive Director, Association of Research Libraries, USA

I am delighted to have this opportunity to work with you and to explore the challenges our institutions face as we engage a rapidly changing higher education environment. The title of my comments is “Library Assessment: Demonstrating Value-Added in a Time of Constrained Resources and Unique Opportunities” and I think this captures what all of us in this conference must address: the real need to focus assessment activities to demonstrate the delivery of increasing value with limited or even declining resources.

Last week I participated in a symposium at the University of Texas (UT) called “Research Library in the 21st Century.” There were a number of provocative perspectives offered there that serve to frame our discussions here this week in Charlottesville, the home of the University of Virginia. The first was by UT President, William Powers, who as part of the welcome to the sixty academic leaders charged the community to address the question: “How can the research university leverage its investment in information resources?” and “What are the paths available to decision makers who will be allocating resources to advance the research library in the future?”

An additional perspective was offered by University of Michigan President Emeritus, James Duderstadt. He characterized the research library as a harbinger of the future of education—a canary in the higher education gold mine. Very importantly, he noted that the library serves as an observation post for student behaviors—a lab for studying and understanding the generational shifts.

A third perspective was offered by Cliff Lynch who observed that there is not a single research library future to which we will all aspire. Environmental changes are dictating the rethinking of scholarly practices and institutional policies and, as a result, the roles of libraries. These new institutional policy choices will lead to different library roles.

These several perspectives are useful as we begin this conference on building effective,

sustainable, and practical assessment in the contemporary academic research library.

We are looking to assessment as a means of articulating the value that libraries add to a research institution. By doing so we demonstrate accountability for investing in the library to provide effective services, to steward the resources entrusted to us, and to chart new library roles in support of undergraduate education and research.

In my comments today, I will reflect on the historical roles of the Association of Research Libraries (ARL) in providing statistics describing the characteristics of research libraries, our work of the last decade in crafting new measures of success, and our continuing involvement in providing methods and processes for conducting library assessment.

Historical Context and Role of ARL in Developing New Measures and Supporting Library Assessment

Statistics describing the characteristics of research libraries have been collected and published annually for ARL members for dozens of years. The data file now covers 1907-08 up to the most recent: 2004-5—just two years short of a century. I like to describe this data set as the most complete and highest quality set of descriptive information that exists in higher education today. Furthermore, thanks to generous support of the University of Virginia and especially to the pioneering work of Kendon Stubbs, these data are available to everyone in higher education through an interactive Web interface.

At a time when accurate data and transparency is seen as one of the biggest needs of higher education, the library community has, in many respects, already delivered. However valuable these data are for describing long-established characteristics of research libraries and for monitoring trends, they are not adequate to address emerging uses of technology for access to

information, nor are they helpful for describing the changing nature of research libraries and the services they offer.

Over the years, ARL experimented with gathering data to assess library performance. As early as 1982, ARL began a Supplementary Statistics form to test the gathering of different statistics, and, if the variables proved useful, they were moved into the main Statistics. For example, it was through the Supplementary Statistics test bed that ARL began collecting information on the character of research library investment in electronic resources.

The tenor of library measurement discussions in the late 1990s was one of frustration peppered with examples of false starts in an environment that changed faster than it could be measured. There was a sense of urgency to develop better measures for the networked environment but there was no sense of commonality regarding which areas were most important to work on. What emerged from the experience of the late 1990s was a realization that any definition of new measures would need to be accepted by the community as part of the larger context of institutional assessment. There was also a realization that developing new measures carried costs and that this work had to be shared in order to minimize the expenses for any single institution. A series of projects and special events were initiated in 2000.

I want to review work in four target areas: user satisfaction, accessibility and usefulness of e-resources, changing role of libraries in teaching, learning, and research, and methods for conducting assessment.

A. User Satisfaction

The contemporary research library needs to understand its success in reaching both the user and the potential user community. It needs to understand information needs met and determine needs that are unmet. It also needs to continually assess success in serving our diverse user community. One of the best known and most used methodologies in this regard is LibQUAL+®. I am sure everyone in this room knows something about this suite of services. Briefly, it is a Web-based, total-market survey that measures library user perceptions of service quality and identifies gaps between minimum and desired expectations, and perceived performance of service. It provides project participants with a reliable and tested methodology for collecting and analyzing data on

user perceptions for purposes of internal and external benchmarking. I want to acknowledge the leaders of the effort who developed this tool and are with us this week: Colleen Cook and Fred Heath have led this effort from Texas A&M and Martha Kyrillidou has led this effort from ARL. Two leading researchers from Texas A&M, Yvonna Lincoln and Bruce Thompson, have served as qualitative and quantitative experts respectively and the instrument's development has been well documented in the literature.

The significance of LibQUAL+® is that it allows us to look consistently at our user communities across disciplines, among peer institutions, and across time. The community now has a database of almost half a million user profiles that is being deployed to help refine and improve library services throughout the world. The experience gained in developing and using LibQUAL+® is being applied to design additional tools. Funding from the National Science Foundation allowed us to adapt the LibQUAL+® instrument for assessing digital library service quality within the National Science Digital Library (NSDL) framework. This new tool, DigiQUAL™ is now ready for additional testing and refinement for any in this room interested in contributing to its further development.

B. Accessibility and Usefulness of Electronic Resources

In February 2000, a set of ARL members began the E-Metrics project, an effort to explore the feasibility of defining and collecting data on the use and value of electronic resources, led by Sherrie Schmidt and Rush Miller. Using surveys, consultations, field tests, and site visits, the project investigators identified sixteen measures in four categories (resources, use, expenditures, and digitization) along with three performance indicators that ARL libraries might use to track electronic resource use. Most of these items relate to the number and use of electronic resources and also seek to describe emerging digital library operations. ARL member libraries are now in the second year of experimenting with the collection of some of these new measures. I doubt it will be a surprise to anyone in this room that this process is slow as the community grapples with definitional and collection challenges.

Another project receiving ARL investment is related to researchers accessing information in a networked environment and how this contributes

to their success. Brinley Franklin (University of Connecticut) and Terry Plum (Simmons Graduate School of Library and Information Sciences) developed a pop-up Web-survey methodology that can be exploited to identify not only how library patrons use electronic services, but also to what purpose that use was being made. In collaboration with Brinley and Terry, ARL has incorporated the instrument, called Measuring the Impact of Networked Electronic Services (MINES) as one of its new measures tools. Here again, we have an opportunity for interested libraries in applying this new capacity and further refining it for the community.

C. Library Impact on Teaching, Learning, and Research

In the movement toward learner-centered education, the emphasis on the student and on learning outcomes is also growing in importance as part of the institutional evaluation of academic programs. One specific way of approaching this need to articulate libraries' contributions to the teaching and learning process is to begin with a process over which libraries have control, such as instruction, information literacy, or reference. ARL has explored that approach by partnering with Kent State University on Project SAILS (Standardized Assessment of Information Literacy Skills), which received partial funding from the Institute of Museum and Library Services (IMLS) to develop an instrument for programmatic-level assessment of information literacy skills. SAILS is based on outcomes defined by the Association of College and Research Libraries' Information Literacy Competency Standards for Higher Education. Carolyn Radcliff from Kent State is presenting in this conference. Again, this is a project in developmental mode and Kent State University Library is now evaluating what further work will be needed on the instrument.

D. Organizational Capacity

One of the challenges facing research libraries is developing an institutional culture that understands the need to focus on assessment and embraces a tool kit of methods for realizing the goals of a culture of assessment. As noted earlier, the LibQUAL+® program has a range of training, including introductory workshops, project-planning sessions, data-review sessions, and post-survey seminars. Most recently, we have worked with the University of Virginia's Jim Self and the

University of Washington's Steve Hiller to create an ongoing service called: "Effective, Sustainable, and Practical Library Assessment" (or ESPA for libraries). This effort is designed to help libraries develop assessment efforts that demonstrate the libraries contributions to teaching, learning, and research.

The Need for Contextualizing Library Assessment

As I reflect back on the history and evolution of ARL's initiatives in measurement and assessment, I conclude that we are at a critical juncture. We must find ways to integrate our library assessment efforts with those of the larger institution. Our community has considerable expertise and experience in this area and is well positioned to partner with others in our universities and research institutions that are facing similar challenges. I believe it is in the interests of libraries and our institutions for librarians to join forces with campus assessment efforts.

Last Tuesday, the National Commission on the Future of Higher Education handed over its final report to Secretary of Education Margaret Spellings. The Spellings Commission, as the inquiry is called, articulates and addresses the following problem statements:

"There is inadequate transparency and accountability for measuring institutional performance, which is more and more necessary to maintaining public trust in higher education. . . . Too many decisions about higher education—from those made by policymakers to those made by students and families—rely heavily on reputation and rankings derived to a large extent from inputs such as financial resources rather than outcomes."¹

The Spellings Commission goes on to call for the creation of an information database and a search engine that would allow students and policymakers to weigh comparative institutional performance. The major recommendations:

- Expanding college access to low-income and minority students
- Increasing opportunities for lifelong education and workforce training
- Keeping college affordable
- Improving learning by utilizing new knowledge and instructional techniques
- Preparing secondary students for higher

education

- Increasing accountability for educational outcomes
- Internationalizing the student experience.

Some in the higher education community think the report emphasized the problems while ignoring the many ways that colleges and universities across the country are implementing new solutions to these problems. Others think that the challenges identified by the Spellings Commission primarily affect undergraduate education. There are other critical challenges facing higher education, particularly related to research and graduate education, and the increasing competition in both of these areas from other countries.

Regardless of your view on the Spellings Commission, the higher education community has to engage the challenges noted in the report. One example of how the community is doing this is the Association of American Colleges and Universities' DEEP Initiative (Documenting Educationally Effective Practice). DEEP highlights the emergence of purposeful and integrative practices, curricular and pedagogical, that help today's students achieve the learning they need for a complex world. Other examples of outcome measures now in use within the higher education community: National Survey of Student Engagement (NSSE)—measures student satisfaction on particular campuses and provides comparative information; Collegiate Learning Assessment—measures educational gains made from freshman to senior year; and, very recently, the National Association of State Universities and Land-Grant Colleges announced a "Voluntary System of Accountability will compile information on prices, living arrangements, graduation rates and curriculums."² This is both a response to the Spellings Commission Report and an engagement of a long felt need in higher education. Each of these presents opportunities for librarian involvement.

Closure—Framing the Conference and the Emphasis on Effective, Sustainable, and Practical Assessment

Library Assessment cannot occur in isolation from the need to think strategically about the future(s) of higher education. In the context of new, emerging directions of the university or research institution,

libraries have to be prepared to ask and effectively answer the following questions:

- What is the central work of the library in adding value to this institution, and how can we do more, differently, and at less cost?
- What important set of services does the library provide that others can't? What new roles are needed?
- What advantages does the research library possess?
- What will be most needed by our community of users in the next decade? How is user behavior changing?
- What should our libraries aspire to be ten years from now? What are the implications of technology driven change?
- What are the essential factors responsible for the success of the library in the new environment of higher education?

Ultimately we are not about books or journals, stacks or reference desks. We are about the advancement of research and the enhancement of teaching and learning. Some may wonder if research libraries can embrace their opportunities. ARL believes libraries can embrace the opportunities before us now.

In closing, I want to return to a comment made earlier in this speech: **We are looking to assessment as a means of articulating the value that libraries add to a research institution. By doing so we demonstrate accountability for investing in the library to provide effective services, to steward the resources entrusted to us, and to chart new library roles in support of undergraduate education and research.** I am confident this conference will help us address these challenges.

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Endnotes

1. United States. Department of Education, *A Test of Leadership: Charting the Future of U.S. Higher Education* (Washington, DC: 2006).
2. See <http://www.nasulgc.org/>.

On the Research Library: A Comment

John V. Lombardi

Professor of History and Chancellor, University of Massachusetts Amherst, USA

The Research Library, what a wonderful name. For those of us who grew up in another time, the library, and especially the research library, stood as a symbol of knowledge and opportunity, a place where a small investment of time produced both specific sought-for enlightenment and serendipitous discovery of unanticipated insight and information. Romanticized though our memories may be, they accurately place the research library at the center of the research university. Many of us built our academic personalities within the context of these wonderful institutions, places of power whose resources and librarians nurtured our intellectual ambitions, defined our opportunities, and mediated our search for meaning and materials. All of this built around the physical object of the book, those artifacts enclosing the information we needed.

Our librarians, in my case my mother, taught us to love the book, cherish the book, care for the book, and above all borrow and return the book so that others could use it when we were through. The rituals of engagement with the library involved the treasured library card, the mysterious and tactile exploration of the card catalog, the privilege of browsing the stacks, and the indoctrination in the Dewey Decimal and LC classification systems; these things created a temple-like mystique reinforced by the obligation of an enforced silence that signified respect.

I dwell on this rapidly fading world less to mourn its passing and more to emphasize the physicality of its existence. We organized knowledge within a domain limited by the constraints of space. The library was no metaphor for knowledge; it was a thing, a building, a place of a particular size and shape, reminiscent of a cathedral. Libraries shared commonalities across a nation if not around the world. Upon entering we knew to look for the card catalog, the reference room, the government documents, the rare book collection, the newspapers, and the serials. When we grew older and gained our full status as members of the academic community, we learned about the acquisition process, collection

development, reference services, and interlibrary loans. We often visited far-away libraries whose collections of objects (books and other materials) represented an essential resource for work in our field, visits that had some elements of a pilgrimage to a revered shrine where we consulted the expert librarians on how to best use our time-limited opportunity.

We and our colleagues in the Association of Research Libraries defined these hallowed places in terms of the physical size of their collections: how many books and serials, how many new additions to the collections, and how many staff. Bigger physical collections of objects were better than small ones, and the great libraries boasted millions of volumes.¹ We spent our time and energy working with subject specialists arguing about what should guide their collection development strategy: all of Latin America; everything on Argentina, Brazil, and Mexico and some support for the Andean countries; but only the most important books on the Caribbean, for example. This work, too, reflected the importance of the physical objects in what we defined as our collection. From time to time, librarians would get together and think about the wastefulness of expecting every library to own a copy of a book with a user base of one person per year in the entire country. Over the years they attempted various approaches to a national system: one institution might collect books on this subject and another on that subject and then both institutions could share collections with the small number of people who might really need the books. The Farmington Plan, begun in the late 1940s, offered a fine example of the utopian vision of this idea. While these programs enjoyed some success for a while, they eventually failed to achieve their full objective because we—the librarians and faculty—wanted the books, the objects to be resident with us in our library in our place.

So we continued to invest in the physical structures to house these artifacts, in the people who managed the objects, and in the systems that provided access. In those simpler times we understood the library's purpose, we knew where it

was, and we knew how to rank its significance in our world.

Unfortunately for those of us who love these places and their objects, technology has undermined this idealized world (along with many other object-related pleasures of life). We find ourselves in an Internet-mediated digital world in which the objects of knowledge may be real, and then extended through digital means, or digital only, existing in virtual form and in multiple identical instances without an authentic original artifact. I know there is a real journal called *portal: Libraries and the Academy* because they send me a copy which I touch and shelve. But I also know that the *portal* journal's real existence is in a virtual form online with Project MUSE; I know that colleagues will download digital images of various articles and archive them on their servers or home computers, copy it, share it with others, or erase it from digital existence, all without a care in the world. There is no real object here, for the printed version of the journal is but a replica of the digital version that serves as the template for all the identical others, copies exactly as good as the original. Do I keep the physical copies as a romantic testimony to my past enthusiasm for the paper word? When these unnecessary paper artifacts finally exceed the spaces available at home and in my office, what will I do with them?

Confronted with this, I worry about the research library, my cathedral of learning, the tangible place for the objects of the scholarship that sustained my life's work. What then is this library in a digital age, do we need it, should I care about it? As a faculty member, I can speculate without consequence, but as an administrator, sooner or later someone will want to know what to do about the library budget, what to do when the library building needs to be renovated, what to do when no more room remains for the physical materials that we suspect almost everyone is consulting online rather than in their raw physicality in our stacks?²

Librarians, whose lives and remarkable expertise have been focused on the collection and care of these things, these books and other materials, feel this challenge even more than I. They struggle to justify their existence, purpose, and value in an amorphous, digitized, and universally accessible world. What is the point of collection development if everything is available online in some form or another? What is the rationale for buying, cataloging, managing, storing, and caring for books that are neither unique nor difficult to

find, and which within a short time are sure to be available online somewhere, accessible to all the people on our university campus without the intercession of a librarian? How will we know the library is of any value, and ultimately, why should the university spend money on a physical library, many of whose materials exist or will exist in virtual form? Why should we spend money on a library when the institution desperately needs the funds for those other endlessly expensive, and not yet virtualized objects of scholarly concern, faculty, staff, and science laboratories and equipment? How do we calculate the value of the physical book (or journal) that will have a unique physical existence for perhaps a year or so before it enters the universal world of cyberspace? Should we buy and dispose of some subset of these perhaps ephemeral objects? Should we pay to store them indefinitely even when after a year or so their content will exist in a universally available virtual form?

In pursuit of answers, librarians turned introspective to see how their carefully developed expert skills could serve a university that no longer cared as much about the historical library. They looked at themselves and found individuals with a keen understanding of the organization and use of knowledge and information and with experience in guiding students and faculty in the development of well-constructed research projects. They said to each other, "Let us join the learning community and provide learning services to undergraduates." A fine idea, but the notion concedes the defeat of the research library as a significant, unique, and valuable enterprise for the university. If librarians are but learning assistants, then perhaps they belong with the other experts in the teaching and learning center. If they serve the faculty and students as guides to electronic resources for study, reports, and research, perhaps they need not be associated with the library at all but rather installed within colleges of arts and sciences, or business or medical schools where they can develop the specialties appropriate for serving those intellectual domains.

Librarians also looked to their customers to validate their existence. Rather than assert a value based on their ability to select and develop a collection of physical objects of eternal intellectual value, transcending the momentary enthusiasms of the marketplace, librarians contemplated using the opinions of their customers to validate their purpose. "Do the students like us?" "Are we doing what the faculty want us to do?" "Do people find

our engagement in teaching and learning effective?" Survey research emerged as a critical dimension for defining librarians within the current academic marketplace. This impulse reflects the parallel substitution of satisfaction for content in the evaluation of student learning among colleges and universities, and librarians like their professorial counterparts, reference the marketplace with some considerable caution.³

This survey approach, valuable as it might be for identifying the service value of librarians, also represents an admission of defeat. If librarians are but the servants of the teaching and learning process, valued for the customer satisfaction they generate, they may well be useful to the institution, but perhaps no longer significant as contributors to its fundamental academic research purpose. The surveys identify the current popular utility to students and faculty of librarians' expertise, their deep knowledge of books and materials, and their wisdom about the organization and classification of knowledge. Yet in providing valuable current services, the librarians lose their central role in building a research library that defines the quality and reach of the research university. Their service produces current satisfaction to transient consumers, surely a useful activity, but in their previous role, as builders of the research library, they controlled, managed, and guided the continuous development of a critical and permanent institutional asset, a resource regarded as one of the defining characteristics of the great university.

As reflected in the surveys, they now appear as high-level study hall monitors in learning commons, situated in library spaces where once we dealt with the books, enduring objects of our trade. In the service mode they help students use computers to access online databases compiled by someone else somewhere else. They work side by side with the computer techs who explain how to cut and paste, format elegant documents in Microsoft word, prepare *PowerPoint* presentations, and enable the students' wireless connections.

We who grew up in love with the books and regarded access to the stacks in the research library as one of the premier privileges conceded by a great university observe this transformation with unease. We fear that the old model that defined the research library as physical books assembled in a physical place is likely obsolete. We recognize that the rapid pace of digitization of everything will soon render all but the most obscure and rare resources

universally available to all of us anywhere. We know that the Library, seen as the center of a university campus, is probably an anachronism kept alive by the size of the old buildings and the bulk of the artifacts stored there as if in a museum of cultural history.

Yet, we are not sure what should replace the library and its functions as arbiter and classifier of knowledge, as guide through the endless range of collected human expertise. Should we retool our librarians into info-technologists whose expertise is the computerized organization and access to digitized information? Should we move the books and other materials into compact storage at remote locations (already well on its way in most research libraries) and convert the old building into a center for learning technology? Should we reorient our sense of institutional competition from measuring the size of our library holdings to the uniqueness of our rare books, our manuscript collections, our international holdings? Should the touchstone of research library distinction become the number of unique items we hold rather than the total size of the collection? If everything is digitized, then perhaps the relevant measure of distinction is whether we, in our university library, capture, maintain, and contribute digitized copies of unique materials?

In truth, we, who are administrators, do not know what to do. We look to the librarians to provide us with a plan, a strategy. Belonging, as many of us do, to an older generation, we find it hard to simply dismiss the library as a relic of a past age, for such a decision might well reflect on our own utility in today's hyper-digitized world. Our librarians have engaged this discussion with imagination and commitment, although as yet we do not see a convergence on a new direction. Perhaps there is too much reticence in the library profession that leads to an over reliance on surveys rather than the bold leadership that charts new directions. Or, perhaps, the notion of the research library as a focus for understanding the organization and management of knowledge is indeed obsolete and we should allow this activity to shrink to a size appropriate for an information access service center.

While we work with our librarians on these difficult questions, we may find that time is our enemy. Each budget cycle at many research institutions finds the research library with a declining share of the university budget; not intentionally, not maliciously, but by default as

other parts of the university with clear goals, objectives, and needs demand resources and have explicit purposeful uses for them. The budget increment goes to them instead of to the research library. We may find that as we take the time required for a careful and cautious evaluation of the future of research libraries, we are left with precious little to decide. Overtaken by events, the university research library may become a place for electronic database subscription management, and the physical library a museum of cultural artifacts from another time managed by curators for a curious public.

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2. This conversation is not at all new to libraries, librarians, and book people in general. In 2001 the Library of Congress engaged these issues in "Committee on an Information Technology Strategy for the Library of Congress. LC21: A Digital Strategy for the Library of Congress," (Computer Science and Telecommunications Board, National Research Council, National Academy Press, Washington, 2001). The Library of Congress's current Web site is wonderfully illustrative of the changed perspectives on library access and purpose. Primary custodian of the physical artifacts of books, some manuscripts, and other objects, the LoC has aggressively moved the virtual representation of these things into cyberspace, and, at the same time, recreated the LoC institution in the mode of public display space to introduce visitors to the physicality of the artifacts accessed virtually for their content. See for example the very well-known site on American Memory at <http://memory.loc.gov/ammem/index.html>. See too the presentation of the special collection of materials from the Kislak Collection at the LoC as an example of the transformation of artifact into virtual content in *The Cultures and History of the Americas, The Jay I. Kislak Collection* at the Library of Congress <http://www.loc.gov/exhibits/kislak/kislak-exhibit.html>. The National Center for Educational Statistics offers a detailed statistic profile of the status of academic libraries in B. Holton, K. Vaden, and P. O'Shea, *Academic Libraries: 2004* (Washington, DC: NECS, 2006), <http://nces.ed.gov/pubs2007/2007301.pdf>. Humanists and their representatives have also engaged the issue as is evident in "Our Cultural Commonwealth: The Report of the American Council of Learned Societies' Commission on Cyberinfrastructure for Humanities and Social Sciences," (American Council of Learned Societies, 2006), <http://www.acls.org/cyberinfrastructure/>. Everyone worries about what librarians do, and some worry that they are too powerful in deciding what we will identify as non-perishable knowledge, as is visible in parts of the recent report from the Modern Language Association on the issues of publication for promotion and tenure, "Modern Language Association Task Force on Evaluating Scholarship for Tenure and Promotion," 2006, http://www.mla.org/tenure_promotion.
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LibQUAL+® (Library Quality), ProSeBiCA (Development of New Library Services by Means of Conjoint Analysis), and CAPM (Comprehensive Access to Printed Materials)

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Abstract

The work described in this paper reflects the natural evolution of longstanding dialogue between the Association of Research Libraries (ARL), Johns Hopkins University (JHU), and Bielefeld University. Each institution has combined library and assessment expertise and developed evaluation methodologies that emphasize different, but interrelated aspects of library services. The resulting tools may be viewed as an integrated Decision Support System (DSS) that can offer librarians and library administrators a comprehensive framework for choosing appropriate tools, methodologies, and resources for evaluation of both existing and future library services.

Introduction

There is an abundance of evidence, including a growing body of literature, regarding the dynamic environment of change facing libraries, archives and museums. Not that long ago, our patrons were satisfied with viewing Web-based images of collections, which addressed geographical constraints or other access issues. Now, our patrons rightly ask how can they might search across these images, or manipulate them for comparison, or, perhaps most importantly, how might they support

learning and research. ARL libraries have been ranked traditionally by the size of their collections, but the New Measures Program has shifted the consideration to services, especially as they relate to supporting institutional goals, and to maximizing the efficient use of resources.

As initiatives such as Google™ Book Search, the Open Content Alliance and the World Digital Library, and cyberinfrastructure-based science projects generate digitized content on an unprecedented scale, the importance of associated services becomes even more important. The combination of increasing emphasis on services, rising expectations from our patrons, fiscal challenges and competition from commercial entities has resulted in an era of greater accountability for cultural heritage institutions. To their credit, these institutions have responded with greater introspection. While institutions may realize the necessity to prioritize services and allocate resources accordingly, the relative paucity of appropriate tools or frameworks for evaluation makes it difficult to accomplish this important goal.

LibQUAL+®

ARL's LibQUAL+® represents a useful analytical tool in this context.¹ The response from libraries provides ample evidence of the need for such

evaluation tools. During the seven years of implementing LibQUAL+®, the project has grown from the small pilot across twelve libraries in 2000 to more than 1000 institutions implementing it. Table 1 summarizes participation by year for the different types of libraries that have implemented LibQUAL+® as of 2007 and Table 2 shows the

different languages that have been supported by the LibQUAL+® service. The application of LibQUAL+® in other countries and languages demonstrates that the need for evaluation tools is international, reflecting trends that have global impact.

Table 1: LibQUAL+® Surveys by Institution Type

Type	Year							
	2000	2001	2002	2003	2004	2005	2006	2007*
Academic Health Sciences		1	35	23	13	13	10	8
Academic Law				1	25	10	6	2
Academic Military				6		1		1
College or University	13	41	111	244	150	201	226	177
Canadian Government								6
Community College			16	29	3	15	27	18
Electronic						1		
European Business					5		16	
Family History					1		2	
Hospital					10	1	1	
National Health Services England							10	
Natural Resources						4		
New York Public			1					
Public				4	1	1	3	2
Research Centers (FFRDC) Libraries						5	2	1
Smithsonian			1		1			
State				1		1	3	2
University/TAFE						2	1	1

* 2007 data reflects Session I data only

Table 2: LibQUAL+® Surveys by Language

	Year							
Language	2000	2001	2002	2003	2004	2005	2006	2007*
Afrikaans						4	1	
American English	13	42	164	285	176	207	236	179
British English				20	22	31	50	18
Danish							1	
Dutch					1		2	
Dutch English				1	1		2	
Finnish							1	
French Canadian				2	1	4		20
French Continental					1		1	
German							1	
Norwegian							1	
Swedish					5	2	1	1
Swedish British English							1	
Swedish English (A.E.)					2	1		

* 2007 data reflects Session I data only

While LibQUAL+® clearly addresses an important need, and has helped libraries better understand our patrons' expectations for library services, there are some important ways in which it might be extended and augmented. Participants at the 2005 ALA Midwinter Conference in Boston, while discussing evaluation, expressed interest in tools beyond LibQUAL+® upon hearing of the Bielefeld, JHU and ARL discussions of a new evaluation framework.

As ARL has noted, LibQUAL+® is but one tool in the ARL New Measures toolbox, namely the most successful application to date in the library world on a global scale. Other tools in the New Measures toolkit include research and development efforts in the areas of digital library service quality, for example DigiQUAL™, funded by the National Science Foundation (NSF) within the National Science Digital Library (NSDL) context. Also, the need to understand and more effectively measure information literacy skills are reflected in efforts like the IMLS-grant supported Standardized Assessment of Information Literacy Skills tool (SAILS) at Kent State University. Lastly, another New Measures efforts is a project entitled Measuring the Impact of Networked Information Services (MINES) that was implemented among sixteen Canadian research libraries members of the

Ontario Council of University Libraries. Using the MINES protocol, these libraries are able to evaluate their available electronic content through a centralized portal.

LibQUAL+® is a modification of SERVQUAL as it has been tested in the research library environment. SERVQUAL (for SERVICE QUALity) was developed for the for-profit sector in the 1980s by the marketing research group of Parasuraman, Zeithaml, and Berry.³ To derive the gaps essential for measuring perceptions of service quality, respondents are asked to establish their judgments across three scales for each question: the desired level of service they would like to receive, the minimum they are willing to accept, and the actual level of service they perceive to have been rendered. The desired scores and the minimum scores establish the boundaries of a zone of tolerance within which the perceived scores should desirably float.

LibQUAL+® measures library service quality along three dimensions: (a) information control (the ability of the users to navigate information content in a self-sufficient and autonomous way), (b) affect of service (this includes the human dimension in terms of the reliability, responsiveness, and empathy of the service provided), and (c) library as place reflects the

physical environment (e.g., place for study and collaboration). All these dimensions have implications for the expectations of our users regarding library services in the coming years. These dimensions also relate to general satisfaction and perceived outcomes, i.e. the ability of the users to be productive researchers, better learners, and successful in their academic and professional endeavors. Last, LibQUAL+® provides us with data on perceived usage of libraries especially as it compares with popular search engines such as Google™. It is clear that Google™ Book Search will have dramatic implications on how users in general perceive libraries and their ability to deliver content successfully at the desktop.

Conjoint Analysis

Bielefeld and JHU have developed evaluation methodologies using a well-established technique from economics, which has already been successfully applied in both marketing and environmental studies, called conjoint analysis. Both CAPM and ProSeBiCa have used conjoint analysis independently and with great success for evaluating existing services and developing new services respectively. These techniques offer significant potential for building upon LibQUAL+®, as explained in a paper co-authored by members of this project team.² The combination of techniques offers an integrated framework of tools that will assist librarians and library administrators in evaluating both existing and future services.

CAPM

As part of JHU's CAPM Project,^{4,5} PI Choudhury and consultant Flores developed an evaluation methodology using multi-attributed, state-preference techniques.⁶ Multi-attribute, stated-preference methods feature choice experiments to gather data for modeling user preferences. In the choice experiments, often expressed as surveys, subjects state which alternatives (services or features) they most prefer; the alternatives are distinguished by their multi-attributes. Multi-attribute, stated-preference experiments provide data that are then used to estimate the marginal benefit of each attribute. These experiments are based upon the idea that users receive utility from services, and this utility is specified and measured through rational models. This approach was used to consider tradeoffs in varying attributes for a specific service of access to materials in an off-site

shelving facility. Patrons were asked to choose varying times for delivery, access to images, and ability to search full-text, along with differing (hypothetical) fees for each of the attributes.⁷

During the 2002 JISC/CNI Conference (and following a LibQUAL+® presentation), Choudhury mentioned the possibility of integrating the two techniques. LibQUAL+® helps identify gaps in a wide range of services, but the question of priorities among the gaps is not immediately addressed. The CAPM methodology explicitly explores patrons' preferences or choices for implementing a particular service. Given the different, but complementary areas of emphasis and different theoretical underpinnings, there is potential for an integrated, and more comprehensive, approach. This idea is described in a special issue of the *Journal on Digital Information* focused on Economic Factors for Digital Libraries. This paper states: "Fundamentally, the 'outputs' from a LibQUAL+® analysis can provide the 'inputs' for a multi-attribute stated-preference analysis, which acknowledges the need for tradeoffs when making decisions regarding resource allocation."⁸ Even with this promising idea, there was arguably too large a difference in the levels of granularity between the two methodologies. Bielefeld's ProSeBiCa⁹ provides the appropriate bridge.

ProSeBiCa

The German Research Foundation Deutsche Forschungsgemeinschaft (DFG) project, ProSeBiCa, a collaborative project between Bielefeld University Library and the Department of Business Administration and Economics at Bielefeld University, uses an adjusted form of conjoint analysis (a specific multi-attributed, stated preference technique).¹⁰ Conjoint analysis has been used successfully for marketing studies and environmental impact studies. Theoretical and empirical papers dealing with conjoint analysis of library services were published in the 1980s.¹¹ These studies, and subsequent ones such as Crawford¹² used conjoint analysis to examine specific library services (e.g., reference services).

ProSeBiCa enables the evaluation of a full range of both existing and possible future services, including modifications (e.g., changes in operating hours), significant development (e.g., new search capability), and revolutionary changes (e.g., the development of the Web). These new ideas for library services were generated using different

sources and techniques such as environmental scanning.¹³ Additional strategies include literature reviews, ideas from students of a Business Administration course at Bielefeld University, and brainstorming workshops with scientific staff and librarians at Bielefeld University, the Brandenburg University of Technology Cottbus, and Kansas State University. The result is a set of more than 250 different ideas for new services, which can be evaluated using an online survey and off-the-shelf analysis software.

Conclusion

Each of these evaluation methodologies offers particular, and complementary, benefits. LibQUAL+® identifies gaps in known or existing services at individual libraries with the ability to compare across institutions. ProSeBiCA offers the possibility of identifying new services and considers tradeoffs between these different services. The CAPM methodology allows one to examine the willingness to pay (either in time or monetary units) for alternate modes of delivering a specific service. This realization motivated this project team to discuss possible integration of the methodologies and present them at the library assessment conference as a panel.

In November 2004, Martha Kyrillidou from ARL met with four individuals from Bielefeld University and the Executive Team of the Sheridan Libraries at JHU. This meeting confirmed a mutual interest in learning about the three methodologies, and for exploring the possibility of an integrated approach that would combine the benefits of each approach. The participants realized that each technique offers significant benefit depending on an individual library's goals for evaluation.

For example, if a library wishes to use an existing framework of services, and hopes to gain an overall impression of its service quality, especially as it compares to peer institutions, LibQUAL+® provides the necessary tools. If a library wishes to develop a set of its existing and potential future services, while considering the relative value of different services (as identified by its patrons), the ProSeBiCA approach is appropriate. Finally, if a library wishes to consider the specific willingness to pay (in either time or monetary units) for a specific service, then the CAPM methodology fits best.

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How You Can Evaluate the Integrity of Your Library Service Quality Assessment Data: Intercontinental LibQUAL+® Analyses Used as Concrete Heuristic Examples

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Abstract

This user-friendly, conversational paper explains how you can evaluate the integrity or trustworthiness of library service quality assessment data. Using the metaphor of a bathroom scale, the ideas underlying (a) score reliability and (b) score validity are presented in an accessible manner. The use of the software, SPSS, to compute the related statistics is illustrated. LibQUAL+® data are used in heuristic examples, to make the discussion concrete, but the illustrations apply to both new and other measures of library service quality. We ought always empirically check our assumptions about the quality of our data whenever we try to characterize service quality.

Introduction

Librarians and library patrons have always recognized that measures of library input metrics, such as collection counts, were limited indicators of library service quality. The library with the biggest collection might not be best organized to help users find the information they need, while a smaller library with a more humble collection might be staffed by user-sensitive librarians who are intensely passionate about helping users locate the information they seek.¹

The growing influence of the Internet has heightened awareness of the limitations of input metrics as indicators of service quality.² Around 1996, both library reference and circulation transactions began downward trends, reflecting the growing use of the Web (a) to identify sources of needed information and (b) to obtain the information, often in digital form.³ In consideration of these trends, in October, 1999, the Association of Research Libraries (ARL) Statistics and Measurement Committee and

the ARL Research Library Leadership and Management Committee initiated the ARL New Measures Initiative, which encompasses a variety of projects including LibQUAL+®,⁴ DigiQUAL™, E-Metrics,⁵ and MINES for Libraries,⁶ all sensitive to alternative service quality metrics.

One of these measures, LibQUAL+®, is a "total-market survey" intended to help librarians understand user perceptions, and thus improve service quality and better meet patron information needs. A total-market survey is one of the 11 ways of listening to users, elaborated by Len Berry,⁷ and implies (a) benchmarking against the service performance of alternative service providers, and (b) measuring perceptions of both users and nonusers to explore potential reasons for the nonuse of services.

LibQUAL+® has been used to collect data from more than 600,000 users at more than 800 institutions. LibQUAL+® has been used in various language variations in the United States, Canada, Australia, England, France, Ireland, Scotland, the Netherlands, Switzerland, Denmark, Finland, Norway, Sweden, Egypt, the United Arab Emirates, and South Africa.

Evaluating the Integrity of Service Quality Assessment Data

When we collect data about library service quality, we cannot simply assume that our quantitative numbers or our qualitative comments have sufficient integrity that the data merit any attention whatsoever. No data are perfect. The question, then, is whether our data are reasonably sufficient to answer the questions we wish to pose regarding library service quality.

Two questions must be considered with respect to quantitative data (e.g., surveys of user perceptions).

These two questions are relevant irrespective of whether the assessment tool is new (e.g., a locally-developed survey designed for one time use), or an existing tool, such as LibQUAL+®, which has been subjected to several dozen published studies investigating the psychometric integrity of its scores.⁸

Thompson⁹ explained these two questions using the analogy of weighing oneself on a bathroom scale every morning. The same analogy will be used here.

Purposes of the Present Paper

The purpose of the present paper is to provide a user-friendly, conversational presentation that explains how you can evaluate the integrity or trustworthiness of library service quality assessment data. Two major score integrity concerns, (a) score reliability and (b) score validity, are presented in an accessible manner. And the use of the software, SPSS, to compute the related statistics is illustrated using actual data.

#1 Score Reliability: Do My Scores Measure Anything?

Many of us weigh ourselves each morning on a bathroom scale. Sometimes on a given day we are happy with the result. On other occasions, however, we may be less than thrilled. On days such as this many of us then acquiesce to an impulse to reweigh ourselves in an attempt to obtain a more favorable outcome. If your second score is half a pound lighter, you may irrationally feel somewhat happier, and stop weighing yourself.

But alternatively,

... if your second weight measurement yields a score 25 pounds lighter than the initial measurement, rather than feeling happy, you may instead feel puzzled or perplexed. If you then measure your weight a third time, and the resulting score is 40 pounds heavier, you probably will question the integrity of all the scores produced by your scale. It has begun to appear that your scale is exclusively producing randomly fluctuating scores. In essence, your scale measures "nothing." That is, measurement protocols measure "nothing" when the scores they produce are completely unrelated to any and all systematic or nonrandom dynamics. . . . When measurements yield scores measuring "nothing," the scores are said to be "unreliable."¹⁰

Assessments that measure absolutely nothing (i.e., are perfectly random) are quite useful. For example, we commonly use tools that yield perfectly unreliable

scores in buildings called "casinos." Or parents who obsess about fairness may assign household chores to their children by randomly drawing paper slips out of a hat. We also use such tools to produce remarkably representative samples by randomly selecting which voters will complete a Gallup Poll, or which university students and faculty will complete LibQUAL+®.

But when we want to know users' (or potential users') perceptions of library service quality, which we presume to be reasonably nonrandom and stable (at least over the course of a few minutes), we want our assessment scores to have as little randomness as possible. Of course, we recognize that perfect reliability is illusive: even the atomic clock maintained by the U.S. Naval Observatory loses a second every 400 years! But we want our library service quality assessment data to be at least Goldilocks "good enough."

The criterion for acceptable score reliability is context specific. When we are using scores to decide which hospitalized patients to disconnect from life support, we will accept very, very little randomness. When we are deciding which preschoolers will have gold versus silver stars pasted on their foreheads as they leave school each day, our standards may be somewhat relaxed, because the consequences of a misjudgment are much less severe.

Of the many coefficients that can be used to quantify score reliability,¹¹ the most commonly used is the coefficient called Cronbach's alpha.¹² Theoretically, coefficient alpha would be 1.0 if the scores had no random influences, and 0.0 if the scores were purely random. When alpha is less than 0.0 (i.e., negative), and especially less than -1.0, the scores are without question compromised.¹³ In social science research, alpha coefficients of at least 0.70 are often considered acceptable.¹⁴

Estimating Cronbach's alpha

The computation of Cronbach's alpha is relatively straightforward using software such as SPSS. The twenty-two core LibQUAL+® items for American English have variable names such "AS01A_pr," "IC02ABpr," and "LP03ABpr." The commands required to obtain alpha coefficients for the (a) Service Affect, (b) Library as Place, (c) Information Control, and (d) total

LibQUAL+® scores can be typed into the SPSS syntax window:

```

reliability variables=
  AS01A_pr IC02ABpr LP03ABpr AS04ABpr IC05ABpr
  AS06A_pr IC07ABpr LP08A_pr AS09A_pr IC10ABpr
  AS11A_pr LP12ABpr AS13A_pr IC14ABpr AS15A_pr
  IC16ABpr LP17A_pr AS18ABpr IC19ABpr IC20ABpr
  LP21A_pr AS22ABpr /
scale(serv_aff)=
  AS01A_pr AS04ABpr AS06A_pr AS09A_pr AS11A_pr
  AS13A_pr AS15A_pr AS18ABpr AS22ABpr /
scale(libplace)=
  LP03ABpr LP08A_pr LP12ABpr LP17A_pr LP21A_pr /
scale(info_con)=
  IC02ABpr IC05ABpr IC07ABpr IC10ABpr IC14ABpr
  IC16ABpr IC19ABpr IC20ABpr /
scale(LibQUALt)=
  AS01A_pr AS04ABpr AS06A_pr AS09A_pr AS11A_pr
  AS13A_pr AS15A_pr AS18ABpr AS22ABpr
  LP03ABpr LP08A_pr LP12ABpr LP17A_pr LP21A_pr
  IC02ABpr IC05ABpr IC07ABpr IC10ABpr IC14ABpr
  IC16ABpr IC19ABpr IC20ABpr /
model=alpha/statistics=descriptive/summary=total .

```

and then executed.

Table 1 presents the Cronbach's alpha coefficients for scores on the three scales and the total protocol across nine languages from the Session I, 2006 LibQUAL+® administration. Note that reliability varies somewhat across data sources (e.g., different

cultures, different points of time of measurement), a finding that reinforces again the important point that tests are not reliable, and instead scores have this property.¹⁵ Thus, never say "the test is reliable" and do not refer to "the reliability of my test." Talk instead about the reliability of your scores.

Table 1
Reliability Analysis for the 22 Core LibQUAL+® Items
for the First Session 2006 Data

Language	<u>n</u>	<u>Scale</u>			LibQUAL+®
		Service Affect	Library as Place	Information Control	
American English	56,799	.94	.89	.91	.96
British English	12,004	.93	.84	.89	.95
Dutch	783	.92	.79	.87	.92
Swedish	1,177	.92	.78	.86	.93
European French	213	.93	.81	.85	.92
German	605	.93	.80	.87	.93
Norwegian	318	.94	.77	.89	.95
Finnish	791	.94	.80	.87	.94
Danish	554	.89	.80	.83	.91

Controlling Score Reliability

What do we do if our scores do not have sufficient reliability for our purposes? The answer to this question requires us to understand the basic factors that drive score reliability. The biggest influence on score reliability is score "spreadoutness" or dispersion.¹⁶ For an accessible treatment of score dispersion or variability, see Thompson.¹⁷

Scores tend to be more reliable when the scores in a dataset are more dissimilar from each other. For example, scores ranging from "1" to "5" for a dataset involving 300 library users will tend to be less reliable than scores ranging from "1" to "99" for 300 users.

Various methods can be used to try to increase score "spreadoutness." For example, changing a response format for ten items from "yes-no" (with a corresponding potential total score of 0 to 10) to "1"-to-"5" (with a corresponding potential total score of "10" to "50") can yield greater score variability.

Another way potentially to increase score variability is simply to add more items. For example, the potential score range (i.e., "40") if people answer ten items using a "1"-to-"5" response format is "10" (i.e., 1x10) to "50" (i.e., 5x10), but the potential score range (i.e., 80) is "20" (i.e., 1x20) to "100" (i.e., 5x20) if people use the same response format to respond

instead to twenty items.

Notice in Table 1 that scores on the total LibQUAL+® protocol tend to be considerably more reliable than scores on the Service Affect scale, and especially the Library as Place scale. This reflects the fact that the total scores involve twenty-two items, Service Affect involves nine items, and Library as Place involves only five items.

Item Analysis

However, score reliability will not be equal even for all assessments containing a given identical number of items. Some items are simply better than others. We can determine which items are performing best by conducting an "item analysis." Furthermore, bad items can actually not just not help score reliability, but actually lower score reliability, so we want to eliminate bad items whenever possible, especially during the development of new measures when bad items are quite frequently present.

Table 2 presents the item analysis results produced by the previous SPSS syntax for the 56,799 American English participants from the Session I, 2006 LibQUAL+® administration. There are two primary coefficients generated by item analyses.

Table 2
Item Analysis for the 22 Core LibQUAL+® Items
for the American English ($n = 56,799$) First Session 2006 Data

Item	Corrected Item- Total Correlation	alpha if Item Deleted
AS01A_PR	.6777	.9571
AS04ABPR	.6862	.9570
AS06A_PR	.6961	.9569
AS09A_PR	.7573	.9562
AS11A_PR	.7586	.9562
AS13A_PR	.7641	.9561
AS15A_PR	.7877	.9559
AS18ABPR	.7822	.9559
AS22ABPR	.7546	.9562
LP03ABPR	.6362	.9578
LP08A_PR	.6388	.9577
LP12ABPR	.6839	.9571
LP17A_PR	.7197	.9566
LP21A_PR	.6313	.9578
IC02ABPR	.5789	.9582
IC05ABPR	.6578	.9573
IC07ABPR	.6789	.9571
IC10ABPR	.7150	.9567
IC14ABPR	.7262	.9566
IC16ABPR	.7475	.9563
IC19ABPR	.7779	.9560
IC20ABPR	.6793	.9571

Note. The alpha for total scores using all 22 core items was 0.96.

Item Discrimination

Logically, if I weighed myself one morning on twenty-two bathroom scales, and twenty-one scales yielded an estimate of 185 pounds, and one scale yielded an estimate of 273 pounds, I would suspect that the last scale was broken. We expect scores from the individual variables used to estimate a total score to be highly correlated with each other, and with the total score as well.

The statistic that measures these dynamics is called "item-to-total-score correlation" or "item discrimination." We want this value to approach +1.0. We definitely don't want items with discrimination coefficients such as 0.0, or -0.25.

However, there is a complication. If we correlated the scores (ranging for each person from "1" to "9") on LibQUAL+® item #1, "AS01A_PR", with scores on the total protocol (ranging from $1 \times 22 = "22"$ to $9 \times 22 =$

"198"), we would overestimate the correlation, because the total scores themselves include the scores on item #1, "AS01A_PR." This inflates our estimated characterization of how well the items are functioning together to yield a single score.

The fix is to correlate the scores on LibQUAL+® item #1, "AS01A_PR," with scores on the total protocol excluding item #1 and using only items 2 through 22, with total scores now ranging from $1 \times 21 = "21"$ to $9 \times 21 = "189."$ This is called a "corrected item discrimination" coefficient, and is computed quite painlessly in SPSS for each item in turn.

We want the item discrimination coefficients to be positive and approach +1.0. According to Table 2, the item "AS15A_PR," "Employees who understand the needs of the users," was the best item (corrected discrimination coefficient = +0.7877). The worst item was "IC02ABPR," "Making electronic resources

accessible from home or office" (corrected discrimination coefficient = +0.5789). Of course, all these twenty-two items had reasonable discrimination coefficients, because LibQUAL+® is not a new measure in the early stages of development. These twenty-two items have already been rigorously vetted across a series of analyses and data sources.

Coefficient alpha-if-Deleted

A related item analysis statistic reported by SPSS is alpha-if-item-deleted. As in love, we can detect the best item by determining which loss makes us feel the most pain (e.g., most worsens the score reliability if not used).

Deleting bad items will actually improve score reliability, so the worst item is the item that when not used most improves score reliability. Bad items are commonly encountered when measures are first developed. However, in the present example, no item deletions result in improved score reliability. The best items were items "AS15A_PR," "Employees who understand the needs of the users," and "AS18A_PR," "Willingness to help users" (i.e., alpha-if-item-deleted = 0.9559), because there is the greatest gap (albeit a very, very small gap) between +0.9559 and the actual reliability for twenty-two items of 0.96.

These results, involving no large gaps between reliability for scores on all twenty-two items and reliabilities when given items are deleted, suggest that deleting given items would have little impact on the reliability of the total scores, and thus perhaps the protocol could be shortened without much consequence. Survey participants might appreciate a shorter protocol! However, the (a) reliability of the subscale scores also must be considered, along with (b) changes in the implicit 9-to-8-to-5 weighting of the three dimensions if some items were deleted, when considering dropping items.

For our data, the required SPSS syntax is:

```
factor variables=
  AS01A_pr AS04ABpr AS06A_pr AS09A_pr AS11A_pr
  AS13A_pr AS15A_pr AS18ABpr AS22ABpr
  LP03ABpr LP08A_pr LP12ABpr LP17A_pr LP21A_pr
  IC02ABpr IC05ABpr IC07ABpr IC10ABpr IC14ABpr
  IC16ABpr IC19ABpr IC20ABpr /
print=univariate initial rotation kmo fscore /
criteria=factors(3) iterate(75)/
extraction=pc/rotation=varimax .
```

Table 3 reports the coefficients produced by this analysis.

#2: Score Validity: Do My Scores Measure the Right Something?

Once we establish score reliability, score validity becomes of interest. Validity asks whether scores measuring something measure the correct and only the correct something. Returning to our bathroom scale example,

Let's presume that upon repeated uses on a given morning your bathroom scale (to your possible disappointment) repeatedly yields the same estimate of your weight: 200 pounds. This evidence suggests that the scores may be reliable. However, if you inferred from your score(s), "Gosh, I must be brilliant, because an IQ of 200 is quite high," questions of score validity might arise!¹⁸

Of course, presuming our library service quality assessment is intended to measure "something," if we determine that the scores are insufficiently reliable, questions of validity are then rendered irrelevant.

There are many, many statistical methods to help evaluate whether our scores, given that they measure something, measure the correct something, and only the correct something (i.e., score validity). But one useful statistical analysis related to these issues is called "factor analysis" (see Thompson,¹⁹ for a relatively readable treatment that uses LibQUAL+® data in all examples). As Nunnally noted, "factor analysis is intimately involved with questions of validity. . . . Factor analysis is at the heart of the measurement of psychological constructs."²⁰

Factor analysis answers questions such as:

1. Do the relationships among responses indicate the presence of the expected number of item groupings or factors (e.g., for LibQUAL+®, three)?
2. Do items measure the intended factors, and only the intended factors?

Table 3
Principal Components Rotated to the Varimax Criterion
for the American English ($n = 56,799$) First Session 2006 Data

Core Item	Factor		
	I	II	III
AS01A_PR	<u>.70817</u>	.27205	.18901
AS04ABPR	<u>.70586</u>	.25481	.22757
AS06A_PR	<u>.79575</u>	.19513	.20437
AS09A_PR	<u>.75687</u>	.30560	.24241
AS11A_PR	<u>.71666</u>	.35712	.24209
AS13A_PR	<u>.80682</u>	.24598	.26048
AS15A_PR	<u>.72885</u>	.36712	.27006
AS18ABPR	<u>.77614</u>	.31365	.25939
AS22ABPR	<u>.65144</u>	.38843	.28220
LP03ABPR	.21944	.20264	<u>.79694</u>
LP08A_PR	.24396	.20670	<u>.76924</u>
LP12ABPR	.29757	.23651	<u>.75522</u>
LP17A_PR	.27837	.33786	<u>.73355</u>
LP21A_PR	.21730	.28958	<u>.70209</u>
IC02ABPR	.23967	<u>.71535</u>	.10501
IC05ABPR	.28599	<u>.69785</u>	.21529
IC07ABPR	.35004	<u>.51167</u>	.37900
IC10ABPR	.30704	<u>.73377</u>	.25650
IC14ABPR	.35444	<u>.57419</u>	.39755
IC16ABPR	.38047	<u>.66629</u>	.30473
IC19ABPR	<u>.41062</u>	<u>.65297</u>	.33541
IC20ABPR	.24650	<u>.68862</u>	.32109

Note. The first two letters of the item names indicate which scale an item was intended to measure: "AS" = Service Affect; "LP" = Library as Place; "IC" = Information Control. The next two characters are the item numbers for the 22 core items as they are presented to library users. Pattern/structure coefficients greater than $|0.40|$ are underlined.

The tabled results suggest that three factors emerged, as expected. And as a general rule, the three factors consist of the expected variables. Thus, the present results are supportive of a conclusion that LibQUAL+® scores are valid.

Of course, the ultimate proof of the validity pudding is whether the scores are useful in improving patron perceptions of library service quality.²¹ And it also must be remembered that consistently about 40% of LibQUAL+® participants write comments to help guide library service quality improvement! It can be mathematically proven that: $40\% \times 600,000$ participants = 240,000 comments!!!

Conclusion

When we collect library service quality assessment data, we cannot assume that our scores have sufficient integrity to guide appropriate action. Indeed, bad data can lead to bad decisions that actually hurt service quality. We must evaluate whether our quantitative data sufficiently measure something (i.e., are reliable), and primarily measure the correct something (i.e., are valid).

We cannot assume that tools that function well in one location will necessarily function well in another location. And we cannot assume that tools that function well at one point in time will necessarily

remain useful indefinitely. We ought always empirically check our assumptions about the quality of our data whenever we try to characterize service quality.²²

The present paper has provided some guidance on using SPSS for reliability and validity analyses of library service quality assessment data. Deeper understanding of these applications can be derived from personal experience working with real data, or from the numerous training venues offered by the Association for Research Libraries, including the ARL Service Quality Evaluation Academy: <http://www.arl.org/stats/academy07.html>.

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Endnotes

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APPENDIX A: Factor Analyses for Other Languages

Table A.1
Principal Components Rotated to the Varimax Criterion
for the **British English** ($n = 12,004$) First Session 2006 Data

Core Item	Factor		
	I	II	III
AS01B_pr	<u>.71930</u>	.22918	.18546
AS04ABpr	<u>.67411</u>	.20948	.21970
AS06B_pr	<u>.79873</u>	.16269	.15555
AS09B_pr	<u>.73084</u>	.29617	.22610
AS11B_pr	<u>.68014</u>	.34518	.20430
AS13B_pr	<u>.80084</u>	.20541	.23182
AS15B_pr	<u>.72842</u>	.33624	.24272
AS18ABpr	<u>.77046</u>	.28500	.24545
AS22ABpr	<u>.62645</u>	.36246	.24168
LP03ABpr	.20923	.18332	<u>.77722</u>
LP08B_pr	.18917	.15905	<u>.77043</u>
LP12ABpr	.31911	.24112	<u>.70271</u>
LP17B_pr	.28317	.30757	<u>.74640</u>
LP21B_pr	.16086	.27362	<u>.57155</u>
IC02ABpr	.15778	<u>.68903</u>	.09388
IC05ABpr	.22477	<u>.69164</u>	.18088
IC07ABpr	.39290	<u>.46465</u>	.35721
IC10ABpr	.27456	<u>.71342</u>	.24222
IC14ABpr	.33186	<u>.56972</u>	.34676
IC16ABpr	.36015	<u>.64087</u>	.27700
IC19ABpr	<u>.41981</u>	<u>.62502</u>	.30715
IC20ABpr	.26093	<u>.67417</u>	.26933

Note. The first two letters of the item names indicate which scale an item was intended to measure: "AS" = Service Affect; "LP" = Library as Place; "IC" = Information Control. The next two characters are the item numbers for the 22 core items as they are presented to library users. Pattern/structure coefficients greater than $|0.40|$ are underlined.

Table A.2
Principal Components Rotated to the Varimax Criterion
for the Dutch ($n = 783$) First Session 2006 Data

Core Item	Factor		
	I	II	III
AS01DUpr	<u>.75935</u>	.18138	.09297
AS04DUpr	<u>.71829</u>	.18965	.12052
AS06DUpr	<u>.77226</u>	.13378	.13034
AS09DUpr	<u>.71532</u>	.31963	.13918
AS11DUpr	<u>.69137</u>	.30076	.18416
AS13DUpr	<u>.81804</u>	.16932	.13866
AS15DUpr	<u>.61999</u>	.28551	.27791
AS18DUpr	<u>.78983</u>	.25233	.11445
AS22DUpr	<u>.62557</u>	.25149	.16077
LP03DUpr	.16858	.11452	<u>.75944</u>
LP08DUpr	.19228	.17063	<u>.64881</u>
LP12DUpr	.16299	.19485	<u>.76655</u>
LP17DUpr	.11588	.17115	<u>.75786</u>
LP21DUpr	.08362	.07617	<u>.61838</u>
IC02DUpr	.06885	<u>.62303</u>	.08320
IC05DUpr	.16874	<u>.75956</u>	.11227
IC07DUpr	.32444	<u>.42798</u>	.27110
IC10DUpr	.28018	<u>.72240</u>	.12762
IC14DUpr	.33184	<u>.64774</u>	.17048
IC16DUpr	.25342	<u>.72266</u>	.17192
IC19DUpr	.29775	<u>.73775</u>	.12157
IC20DUpr	.24713	<u>.63909</u>	.19478

Note. The first two letters of the item names indicate which scale an item was intended to measure: "AS" = Service Affect; "LP" = Library as Place; "IC" = Information Control. The next two characters are the item numbers for the 22 core items as they are presented to library users. Pattern/structure coefficients greater than $|0.40|$ are underlined.

Table A.3
Principal Components Rotated to the Varimax Criterion
for the **Swedish** ($n = 1,177$) First Session 2006 Data

Core Item	Factor		
	I	II	III
AS01S_pr	<u>.76593</u>	.12645	.12804
AS04S_pr	<u>.52470</u>	.10189	.34934
AS06S_pr	<u>.81172</u>	.15285	.15573
AS09S_pr	<u>.74876</u>	.25418	.17100
AS11S_pr	<u>.69287</u>	.29780	.16239
AS13S_pr	<u>.81047</u>	.22757	.20035
AS15S_pr	<u>.71297</u>	.33658	.22727
AS18S_pr	<u>.73009</u>	.30363	.19160
AS22S_pr	<u>.60265</u>	<u>.40143</u>	.20105
LP03S_pr	.22334	.16191	<u>.74231</u>
LP08S_pr	.19480	.16377	<u>.74856</u>
LP12S_pr	.30975	.34151	.29081
LP17S_pr	.20708	.30133	<u>.73135</u>
LP21S_pr	.19219	.28574	<u>.65182</u>
IC02S_pr	.13758	<u>.63253</u>	.08474
IC05S_pr	.18453	<u>.67754</u>	.19145
IC07S_pr	.35060	<u>.43321</u>	.26647
IC10S_pr	.21090	<u>.71491</u>	.14886
IC14S_pr	.29896	<u>.57717</u>	.33791
IC16S_pr	.18220	<u>.72541</u>	.17677
IC19S_pr	.33584	<u>.68713</u>	.21165
IC20S_pr	.18259	<u>.64987</u>	.17770

Note. The first two letters of the item names indicate which scale an item was intended to measure: "AS" = Service Affect; "LP" = Library as Place; "IC" = Information Control. The next two characters are the item numbers for the 22 core items as they are presented to library users. Pattern/structure coefficients greater than $|0.40|$ are underlined.

Table A.4
Principal Components Rotated to the Varimax Criterion
for the **Continental French** ($n = 213$) First Session 2006 Data

Core Item	Factor		
	I	II	III
AS01FRpr	<u>.84536</u>	.11175	.14820
AS04FCpr	<u>.59351</u>	.30711	.18482
AS06FCpr	<u>.81476</u>	.10336	.03965
AS09FRpr	<u>.86183</u>	.17454	.07780
AS11FCpr	<u>.78718</u>	.16572	.14603
AS13FRpr	<u>.83942</u>	.27375	.10446
AS15FCpr	<u>.80584</u>	.23019	.16077
AS18FRpr	<u>.72416</u>	.29665	.15072
AS22FRpr	<u>.47491</u>	<u>.45675</u>	.26049
LP03FRpr	.23207	-.02023	<u>.74665</u>
LP08FRpr	.12247	.25205	<u>.51784</u>
LP12FRpr	.05868	.07029	<u>.84943</u>
LP17FRpr	.08890	.26106	<u>.72989</u>
LP21FCpr	.10711	.26583	<u>.71608</u>
IC02FCpr	.22093	<u>.75080</u>	-.09459
IC05FCpr	.13405	<u>.52284</u>	.14240
IC07FCpr	.32747	<u>.57281</u>	.18741
IC10FCpr	.17461	<u>.75691</u>	.06935
IC14FCpr	.23470	<u>.48328</u>	<u>.40724</u>
IC16FRpr	.12342	<u>.71837</u>	.23587
IC19FCpr	.17996	<u>.56458</u>	.37643
IC20FRpr	.19017	<u>.67116</u>	.24981

Note. The first two letters of the item names indicate which scale an item was intended to measure: "AS" = Service Affect; "LP" = Library as Place; "IC" = Information Control. The next two characters are the item numbers for the 22 core items as they are presented to library users. Pattern/structure coefficients greater than $|0.40|$ are underlined.

Table A.5
Principal Components Rotated to the Varimax Criterion
for the **German** ($n = 605$) First Session 2006 Data

Core Item	Factor		
	I	II	III
AS01GEpr	<u>.73050</u>	.15067	.18209
AS04GEpr	<u>.64399</u>	.16748	.27712
AS06GEpr	<u>.80651</u>	.10656	.14570
AS09GEpr	<u>.74907</u>	.29244	.18236
AS11GEpr	<u>.65231</u>	<u>.41312</u>	.09902
AS13GEpr	<u>.85047</u>	.22064	.17284
AS15GEpr	<u>.72689</u>	.37183	.12593
AS18GEpr	<u>.79287</u>	.24323	.17900
AS22GEpr	<u>.67398</u>	.34968	.10061
LP03GEpr	.11385	.16892	<u>.80730</u>
LP08GEpr	.10003	.13522	<u>.80646</u>
LP12GEpr	.23421	.29251	<u>.68329</u>
LP17GEpr	.17213	.19777	<u>.76820</u>
LP21GEpr	.18713	.05518	<u>.49747</u>
IC02GEpr	.15638	<u>.66469</u>	.02596
IC05GEpr	.18697	<u>.72074</u>	.19147
IC07GEpr	.30726	<u>.45185</u>	.32101
IC10GEpr	.18484	<u>.73561</u>	.12694
IC14GEpr	.24787	<u>.65352</u>	.24219
IC16GEpr	.26375	<u>.72112</u>	.21460
IC19GEpr	.36775	<u>.68382</u>	.21400
IC20GEpr	.19882	<u>.69239</u>	.11748

Note. The first two letters of the item names indicate which scale an item was intended to measure: "AS" = Service Affect; "LP" = Library as Place; "IC" = Information Control. The next two characters are the item numbers for the 22 core items as they are presented to library users. Pattern/structure coefficients greater than $|0.40|$ are underlined.

Table A.6
Principal Components Rotated to the Varimax Criterion
for the **Norwegian** ($n = 318$) First Session 2006 Data

Core Item	Factor		
	I	II	III
AS01NOpr	<u>.71414</u>	.34249	.20717
AS04NOpr	<u>.73926</u>	.26584	.18324
AS06NOpr	<u>.78132</u>	.27884	.19796
AS09NOpr	<u>.76852</u>	.37120	.08125
AS11NOpr	<u>.68079</u>	<u>.41921</u>	.11038
AS13NOpr	<u>.77204</u>	.28385	.16208
AS15NOpr	<u>.68904</u>	.38809	.11577
AS18NOpr	<u>.83024</u>	.28658	.11620
AS22NOpr	<u>.60968</u>	.23111	<u>.45580</u>
LP03NOpr	.23806	<u>.50671</u>	<u>.46313</u>
LP08NOpr	.07658	.35504	<u>.72721</u>
LP12NOpr	.30106	<u>.54949</u>	.20079
LP17NOpr	.17785	<u>.68505</u>	<u>.43873</u>
LP21NOpr	.19346	.05951	<u>.77124</u>
IC02NOpr	.26783	<u>.55339</u>	.09842
IC05NOpr	.32649	<u>.56784</u>	.24484
IC07NOpr	<u>.54496</u>	<u>.43071</u>	.10643
IC10NOpr	.36407	<u>.74051</u>	.13593
IC14NOpr	.35175	<u>.71971</u>	.12097
IC16NOpr	.36822	<u>.69522</u>	.12643
IC19NOpr	<u>.44274</u>	<u>.65286</u>	.19399
IC20NOpr	<u>.52822</u>	<u>.53155</u>	.11115

Note. The first two letters of the item names indicate which scale an item was intended to measure: "AS" = Service Affect; "LP" = Library as Place; "IC" = Information Control. The next two characters are the item numbers for the 22 core items as they are presented to library users. Pattern/structure coefficients greater than $|0.40|$ are underlined.

Table A.7
Principal Components Rotated to the Varimax Criterion
for the **Finnish** ($n = 791$) First Session 2006 Data

Core Item	Factor		
	I	II	III
AS01FIpr	<u>.79684</u>	.15234	.17523
AS04FIpr	<u>.68432</u>	.19241	.26108
AS06FIpr	<u>.83545</u>	.18645	.14360
AS09FIpr	<u>.75794</u>	.24111	.15014
AS11FIpr	<u>.73830</u>	.32829	.14678
AS13FIpr	<u>.84250</u>	.15732	.18871
AS15FIpr	<u>.77118</u>	.27452	.22210
AS18FIpr	<u>.82217</u>	.22168	.18602
AS22FIpr	<u>.67314</u>	.27725	.21747
LP03FIpr	.26883	.24311	<u>.66116</u>
LP08FIpr	.16851	.16869	<u>.80798</u>
LP12FIpr	.24731	.34770	.22448
LP17FIpr	.22761	.24967	<u>.82526</u>
LP21FIpr	.20648	.13313	<u>.75796</u>
IC02FIpr	.08546	<u>.70073</u>	.00627
IC05FIpr	.15962	<u>.71227</u>	.17398
IC07FIpr	.31617	<u>.43444</u>	.30733
IC10FIpr	.19682	<u>.77721</u>	.12192
IC14FIpr	.35417	<u>.58414</u>	.27129
IC16FIpr	.39574	<u>.67772</u>	.23373
IC19FIpr	.39109	<u>.67926</u>	.21691
IC20FIpr	.13682	<u>.74190</u>	.19503

Note. The first two letters of the item names indicate which scale an item was intended to measure: "AS" = Service Affect; "LP" = Library as Place; "IC" = Information Control. The next two characters are the item numbers for the 22 core items as they are presented to library users. Pattern/structure coefficients greater than $|0.40|$ are underlined.

Table A.8
Principal Components Rotated to the Varimax Criterion
for the **Danish** ($n = 554$) First Session 2006 Data

Core Item	Factor		
	I	II	III
AS01DApr	<u>.67479</u>	.25166	.02982
AS04DApr	<u>.61525</u>	.05196	.25990
AS06DApr	<u>.75537</u>	.14520	.10009
AS09DApr	<u>.71515</u>	.30694	.05136
AS11DApr	<u>.67333</u>	.38447	.06528
AS13DApr	<u>.77136</u>	.09036	.19458
AS15DApr	<u>.69241</u>	.33309	.16425
AS18DApr	<u>.67637</u>	.36542	.07514
AS22DApr	<u>.46815</u>	.37655	.15468
LP03DApr	.15846	.09150	<u>.76374</u>
LP08DApr	.10269	.10146	<u>.65668</u>
LP12DApr	.31133	.15208	<u>.68637</u>
LP17DApr	.13285	.23160	<u>.73246</u>
LP21DApr	-.03409	.16951	<u>.74211</u>
IC02DApr	.03016	<u>.66488</u>	.06455
IC05DApr	.21650	<u>.65483</u>	.11662
IC07DApr	.30777	<u>.47462</u>	.20481
IC10DApr	.19052	<u>.71139</u>	.04421
IC14DApr	.33211	<u>.52906</u>	.22687
IC16DApr	.35078	<u>.63544</u>	.17099
IC19DApr	.33093	<u>.57311</u>	.21758
IC20DApr	.20673	<u>.62855</u>	.22422

Note. The first two letters of the item names indicate which scale an item was intended to measure: "AS" = Service Affect; "LP" = Library as Place; "IC" = Information Control. The next two characters are the item numbers for the 22 core items as they are presented to library users. Pattern/structure coefficients greater than $|0.40|$ are underlined.

Wayfinding in the Library: Usability Testing of Physical Spaces

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Even the most confusing buildings become familiar, and those of us who work in them can hardly remember our own initial confusion. If it is impossible to recapture the strangeness of a place or to imagine how a new user could become disoriented in it, observation of users themselves should help.

—Gale Eaton, "Wayfinding in the Library"¹

Abstract

It's common for libraries to evaluate the usability of online information systems by asking a subject to think out loud while they perform such tasks as finding a book title or journal article. This same technique can be adapted to determine how well individuals are able to find and retrieve information in the physical environment.

This paper discusses the benefits and utility of even small-scale wayfinding studies as a tool for highlighting barriers to the use of library collections. A primary benefit is that wayfinding studies allow librarians and other staff to see their library space through new eyes and better understand how difficult it can be for novice users to find library materials. This knowledge can inform efforts to reconfigure libraries and underscore areas for instruction. Wayfinding studies can also evaluate the effectiveness of library orientation programs and directional aids.

An example illustrating the utility of wayfinding studies is a recent assessment at the University of Chicago Library. When this library participated in the spring 2004 LibQUAL+® survey, it received many comments from users that books were

frequently not on the shelf. However, a follow-up study showed over a fifth of the books that patrons reported being unable to find were found in place on the shelf. In the Spring of 2005, a team at the University of Chicago Library undertook a study to help identify the reasons users were having trouble finding books in the Regenstein Library, a large building housing over four million volumes of material in the Humanities and Social Sciences in open bookstacks.

The study revealed problems with the terms used to designate locations, the arrangement of physical collections, the lack of an effective map and signage system, failure to distinguish between reference and circulating collections, and highlighted difficulties in reading call numbers. This compelling information is being used to reconfigure spaces improve directional aids, and inform our orientation and instruction programs—changes which will be assessed for effectiveness through additional wayfinding studies.

Introduction

When the University of Chicago Library participated in the ARL LibQUAL+® survey in May 2004, 18% of the respondents who took the opportunity to supply additional comments complained that many Library materials were missing or not able to be found (85 out of 482 comments). For example, one respondent maintained, "There are massive numbers of books listed as not checked out, but that are not in the library," while another stated, "I feel like fully one-third of the books I look for are not there, even though they are not checked out." Public services

staff acknowledged having heard users express similar frustrations, but they also reported that frequently they were able to locate the material when helping patrons.

During the past decade the University of Chicago Library devoted significant effort toward improving the accessibility of its collections. Retrospective conversion meant that users could identify virtually all Library materials through the online catalog. Process mapping techniques were employed to ensure that Library materials were re-shelved accurately and efficiently.² The Library instituted formal programs for orienting students to collections through tours that provided instruction in call numbers and how to locate items. In addition, every college class is assigned a "Class Librarian" who makes students aware of the resources and services available at the Library and provides information on using the collections.³

Despite these efforts, many users still failed to find materials in the Library. To better understand why users perceived the Library as having many missing materials, staff decided to analyze the reports they received from patrons about material they were unable to locate and thus asked them to be searched. This analysis focused on the Joseph Regenstein Library, the largest campus library, which houses 4.5 million volumes in the Humanities and Social Sciences in more than half a million square feet and seven levels of open bookshelves. During the summer and autumn 2004 academic quarters, bookshelves staff examined 1,782 search requests. Of these search requests, 396 (22%) were found on the shelves in their proper location, and circulation records indicated that these items had not been recently re-shelved.⁴ Thus more than 1 in 5 of submitted search requests were for items that should have been findable at the time the request was made.

Why did so many users fail to find items that were properly shelved? In the spring of 2005, a team composed of three public services staff members and an Information Technology staff member was formed to answer this question. All of these individuals had experience with assessment techniques through participation in the Library's Assessment Resource Group.

The study team considered which assessment methodology would best allow them to discover why users could not find books in the Library. Existing data from LibQUAL+® and access services statistics provided rich information about borrowers' expectations and their use of the

collections, but they did not explain why users were unable to find available Library material. The team also decided that surveys and focus groups would be ill-suited to answer the research question because respondents and participants were unlikely to know why they had failed.

The team ultimately decided that usability testing was the most promising methodology for addressing this issue. Previous usability tests with the Library catalog and electronic resources highlighted the benefits of direct observation for understanding how users seek information. Usability testing for system interfaces requires users to complete tasks within a system with researchers watching for failure points along the way. It posits an assigned goal that can be achieved if one follows the appropriate steps. Couldn't this approach be extended to include navigating physical spaces as well as virtual environments?

By extending usability testing into physical spaces, the team sought to directly observe and record users' attempts to find materials. The hope was that enough instances of failure could be observed to allow the team to identify common stumbling blocks.

Review of Wayfinding Literature

In his influential 1960 work, *The Image of the City*, architect and city planner Kevin Lynch asserted that the "legibility" of a city can be determined by "the ease with which its parts can be recognized and can be organized into a coherent pattern." He maintained that the process of "way-finding" relies on mental maps that we use to "interpret information and guide action."⁵

In the mid-1970s, Romedi Passini extended Lynch's theory to architectural spaces when he conducted the first empirical wayfinding study as part of his doctoral dissertation in Man-Environment Relations.⁶ Defining wayfinding as "the process which leads a person from a point of origin to a destination," Passini studied how well individuals could find specific locations within complex public structures in downtown Montreal.⁷ In preparation for this study, he developed an experimental procedure and notation system, which he tested in a pilot study similar to our present study. For the pilot, subjects were asked to locate the University of Pennsylvania Library, find the card catalog, look up a book, and find a book on the shelf. Participants were asked to verbalize the problem-solving process while completing the task.⁸ There is, however, no indication that the

results of the pilot were reported or published. Passini, however, did continue his interest in wayfinding in non-library spaces through many subsequent books and articles.⁹

The most sustained treatment of wayfinding in libraries is the 1979 compilation of original articles *Sign Systems for Libraries: Solving the Wayfinding Problem*.¹⁰ In the foreword, David Kaser succinctly states the book's overarching theme as "libraries can be made legible."¹¹ His interest in wayfinding stemmed from his experience viewing videotapes of first-time visitors to Cornell's Olin Library. He tells of being "startled and chagrined" upon witnessing users' inability to navigate the building.¹² The book recommends observation of patrons going about their searching as a primary means for evaluation, while noting that this "obtrusive method" is "not methodologically pure, but helpful." To reduce the obtrusive quality of observing individuals who are not voluntary participants in a study, Lubans and Kushner suggests that a "variation would be to pay new users to take part in an experiment, for example present them with a direction problem and have them describe to the investigator how they solved it."¹³ Our study takes their suggested approach.

O'Neill researched how floor plan complexity affects architectural legibility. When plotting measures of wayfinding performance (wrong turns, rate of travel, backtracking and hesitations) he found that signage may not be able to compensate in extremely complex buildings.¹⁴

Eaton's study sought to gauge search efficiency by timing and mapping the routes of subjects looking for a specific item in an unfamiliar library. She observed that subjects frequently deviated from "direct routes strategically, in search of orienting information."¹⁵

Eaton, Vocino, and Taylor used surveys and observation to evaluate users' perceptions of directional and locational signs at the University of Rhode Island Library.¹⁶ The observation portion of the study was limited to monitoring the number of users who looked at specific signs during a given time period.

Bosman and Rusinek conducted a survey to help identify collections and services that posed problems for users. They used the same survey to try to measure the effectiveness of the project after new signs were in place. They note that while statistical analysis of the results proved only "marginally successful," users' comments provided "the project directors an opportunity to study the

library from the users' perspective and helped define and correct problem areas."¹⁷

In her 2004 Ph.D. dissertation, "Wayfinding Tools in Public Library Buildings: A Multiple Case Study," Beecher asked volunteers to locate five items in unfamiliar public libraries and to record on tape their chosen route, to note any information sources they used, and to report any comments on the experience in general.¹⁸ These sessions were timed. Not one of the sixty-one volunteers found all five items in the two hours allotted for the task.¹⁹ At least 80% of the study participants experienced navigational problems and that terminology proved a stumbling block for more than half. She pointed out that participants frequently looked to the computer for spatial navigation information.²⁰ Arthur and Passini maintained, "It is the combination of too many decision points and not enough information that gets people lost."²¹ Large research libraries will necessarily create multiple decisions in wayfinding and will thus require careful attention to supplying useful information that can make their spaces legible to users and allow them to generate accurate mental maps.

Methodology

In reviewing the literature, it was clear that direct observation is the best method for determining whether users can successfully navigate a variety of spaces and that this approach can also be helpful in assessing library signage systems. The team adopted a testing design based on the model described by Jakob Nielson in Usability Engineering.²²

The team started by identifying the steps required to find a book in a library. Downs breaks the wayfinding process into four linked operations: orientation, choice of route, keeping on the right track, and recognition of objective.²³ For purposes of the present study, these operations translate into seven steps: 1) searching the online catalog; 2) recording the call number, library location, and availability; 3) identifying the floor and collection where the item shelves; 4) finding the proper floor and collection; 5) locating the proper shelving range; 6) identifying the correct shelf; and 7) finding the book. These steps were transcribed onto a form that could be used to track the process used by individuals when searching for materials in the Library. The form was tested by following Library student workers who were asked to find specific items in the collection and modified as appropriate.

Once the recording template was finalized, the study team decided that novice users would best highlight the problems in navigating the Library's collections. While any students and researchers unfamiliar with the Library would encounter the same obstacles, we decided to recruit from first-year students in the College of the University of Chicago, giving preference to those who had never worked in the Library and who had minimal experience using the Library's collections. An e-mail was sent to first-year students which stated in part:

"The Library is currently looking for volunteers from the Class of 2008 for a study of how students look for books. The study will take one hour and participants will receive a \$15 gift card from the University Bookstore."

The e-mail directed students to a Web signup form where they were asked some questions about frequency of Library and catalog use, as well as their availability. The study team received 206 valid responses (17% of the total first-year class). From this sample the fifteen individuals reporting the least experience with the Library were asked to participate in the study. After three cancellations, the study team ended up conducting 12 sessions. Since the goal was to identify major failure points rather than create a statistically valid analysis of failure frequency, twelve sessions was considered more than adequate for the purpose and could be conducted without too great a time commitment by the study team.

Each session was conducted by two members of the study team, with one acting as facilitator and the other as recorder. The facilitator told each participant:

"All of the Library help desks are closed. You've been asked by your instructor to locate three titles. We would like to know how you would go about finding them. Please narrate your thoughts aloud for my benefit. Anything you say will be useful to me and will help me learn how we can make books easier to find. We want to know if things are confusing, unclear, or misleading, so don't hesitate to mention things you don't like. My colleague is here to help capture the steps you take."

Each participant was then presented with a list of three book titles. The first was for a title with a single copy available in the bookstacks. The second title had multiple copies listed in the online catalog

but only one currently available copy, which was located in the bookstacks. The third title was for a book located in one of the Library's non-circulating reference collections. The titles varied with each session in order to uncover the greatest number of potential obstacles to finding materials.

Throughout the session the facilitator's role was to prompt subjects to narrate their actions completely and to intervene if it became obvious that subjects were getting frustrated or could go no further without help. The decision to intervene is consistent with Nielson's recommendation to "not let a user endlessly struggle with a task if the user is clearly bogged down and getting desperate."²⁴ Since there were an unknown number of failure points, the study team decided not to let any single failure abort the search but to encourage participants to continue searching for all three titles until they were found.

The recorders for each session struggled to capture search strategies and failure points accurately using only written notation. The team had hoped to report metrics on failure points, but this information could not easily be quantified given the many possible approaches to completing the assigned tasks. There was no single "right" way to look for the three books, and the approaches taken by participants were conditioned by the sequence in which they searched for their three books, their previous knowledge, their use of stairs or elevators, their use of online versus printed directional aids, and the location of the books they were searching. The myriad approaches to searching made it difficult to record data on the form that the team had created for this purpose. The form assumed a linear approach that proved unrealistic. It became clear that narratives were the best way to capture wayfinding attempts, so after each session was completed, the recorders wrote narrative summaries. The study team analyzed the narratives to identify failure points, and recurring failure points were noted. The team assessed each failure point according to the severity of the problem and how readily the issue could be addressed.

Results

Every participant failed to find all three books without at least some prompting. Some participants found one or two of their items without help, but none were able to find all three. The sessions provided clear evidence of the problems encountered and ample information about why

users were unable to locate materials in the Library's collections. Failure points were found both in searching the online catalog and in navigating physical spaces, though the latter presented more challenging impediments. Among the most frequent stumbling blocks were ineffective and poorly placed maps, failure to distinguish between reference collections and the main bookstacks, unclear terminology, and poorly delineated reference collections with multiple call number sequences on a single floor.

At the time of the study, Library maps and signs did not meet users' directional needs. The Library's

physical footprint is not easily discerned because of its non-rectilinear shape. Moreover, the building is essentially bisected into reading room areas (on the east side) and main bookstacks (on the west side). Only a narrow corridor on each floor connects the two halves (Figure 1).²⁵ Subjects often found it difficult to locate this corridor since it was not clearly depicted on Library maps. In fact, Library floor maps showed either the reading room area or the bookstacks area but did not provide an overall picture of a floor or show how the two halves were related, and were frequently oriented in different directions.

Figure 1: Second floor Regenstein Library showing irregular footprint and bookstacks entrance.

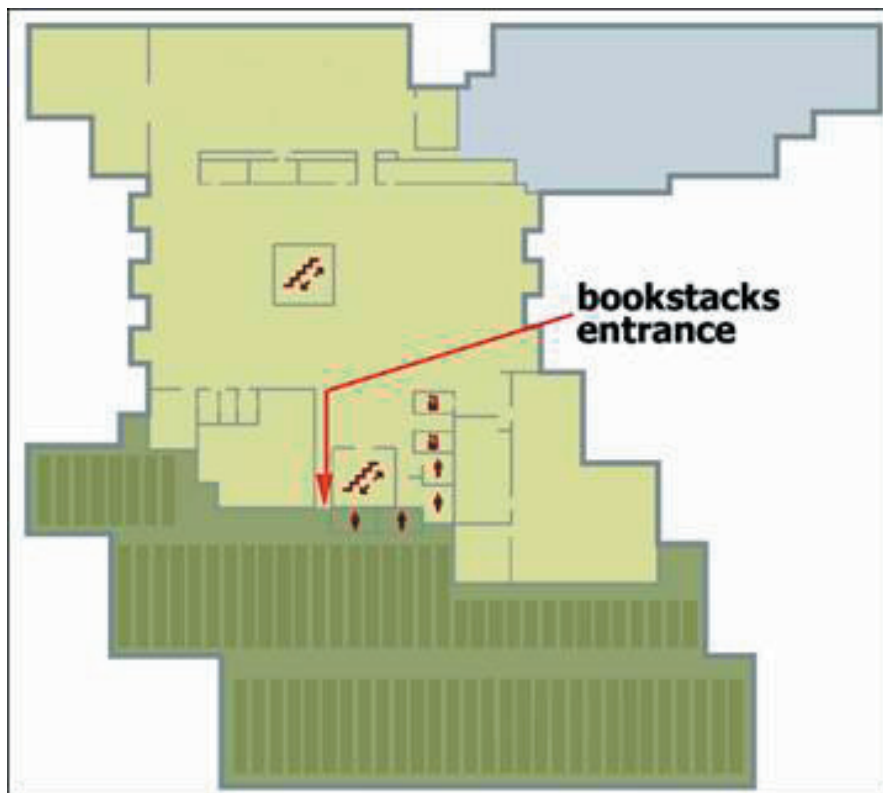
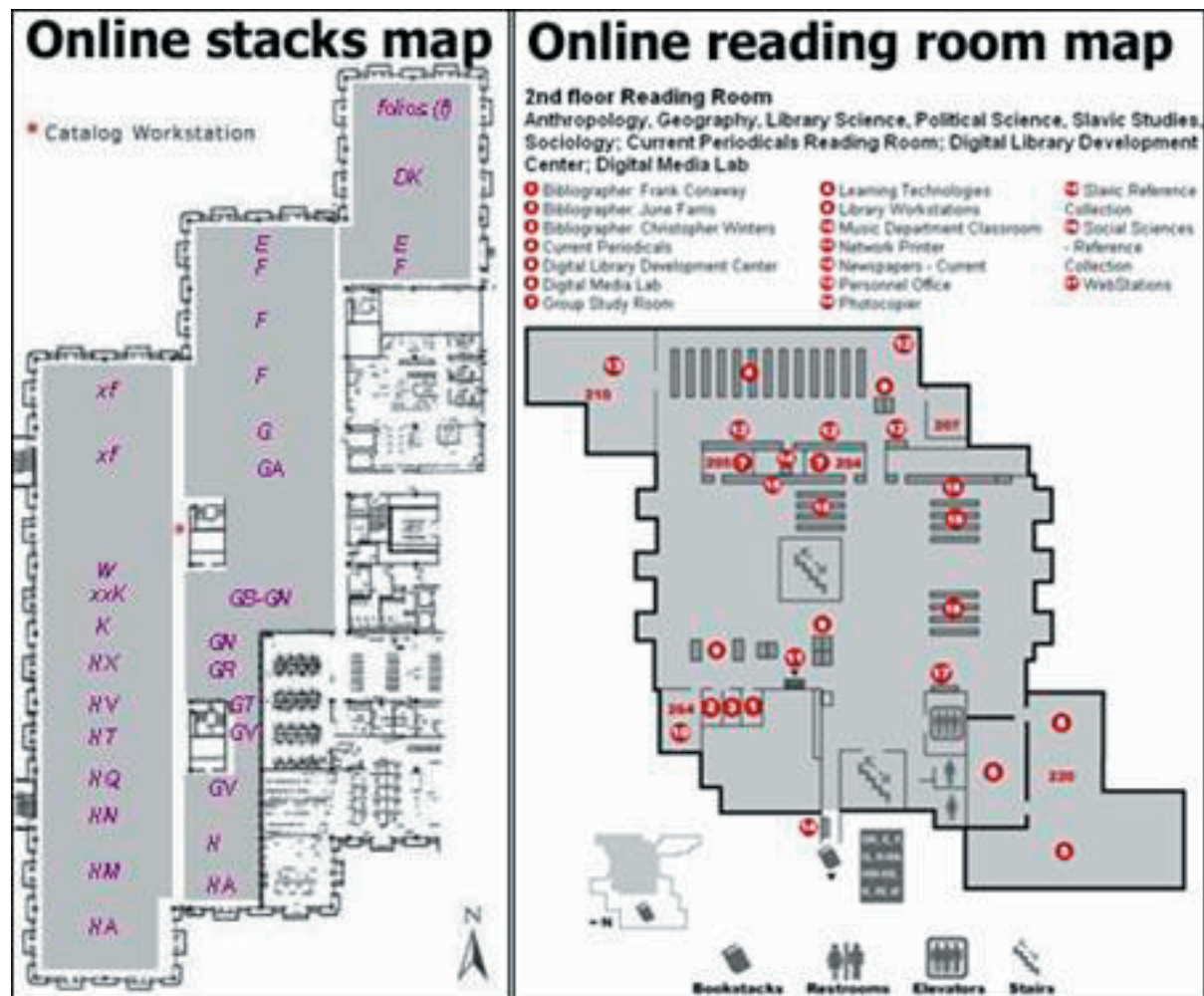


Figure 2: Online maps of 2nd floor bookstacks (l) and reading room (r)



The physical floor maps, for both reading rooms and bookstacks, were frequently overlooked. When they were consulted, participants found the maps to be incomplete, contained irrelevant information, and often lacked standard orienting cues such as current location and direction. While looking at a map, one complained, "This doesn't help me at all.

The map doesn't say where you enter the floor, and I can't tell where I am."

Additional signage compounded the problem by creating visual clutter and making it unclear which sign to consult to locate material. Figure 3 shows one particularly problematic area in which five signs compete for attention.

Figure 3: View of 2nd floor reading room showing (from left) reading room map, directions to personnel office, map of networking support offices, signs stating Library guidelines for food and etiquette, and "Second Floor Directory" containing map of emergency exits.



Participants also failed to grasp the fundamental distinction between reference areas ("reading rooms") and the bookstacks. This was both a conceptual problem and a problem with terminology. Many participants had not yet discovered the bookstacks and thus assumed the reading rooms were the primary site for book collections. Even when participants knew they were looking for a "reading room" they frequently failed to connect the term with the physical space, often wandering around the reading room looking for a "reading room," which they imagined as a small, enclosed area. User expectations also made the term "collection" problematic. One user was unable to find a book in the "art reference collection" because she envisioned it as a separate room that "required permission to use" rather than as a set of bookshelves within a larger reading room.

Another obstacle to finding materials was having reading rooms with multiple collections, each with separate call number sequences that were not clearly delineated. This meant that similar call numbers were shelved in more than one place within a reading room. This problem surfaced so frequently in one reading room that halfway through the study, the study team decided it would be unsporting to continue asking participants to find materials within this area.

Though all participants seemed to understand the need to use call numbers to locate items, some were unfamiliar with Library of Congress call numbers or made errors in transcribing them. More than one participant read the initial part of the call number using decimal logic (for example, thinking Z5936 should locate in the Z473 to Z673 range). This approach may indicate greater familiarity with Dewey Decimal call numbers than Library of

Congress. Some subjects seemed to underestimate the number of books within a call number range, and would begin browsing titles as soon as they found a section matching the initial portions of a call number.

Lessons Learned

One of the most valuable lessons learned in conducting the wayfinding study is that a rich amount of information can be gleaned from a quite modest allocation of resources: it took only four staff members and two weeks to conduct the study. The actual time spent conducting sessions with participants totaled only about a dozen hours with an outlay of \$180 for incentives.

The large number of volunteers shows that it is relatively easy to find students willing to devote an hour for a \$15 gift certificate. The team had worried that the incentive would not prove sufficient to garner the desired pool, but in fact so many students responded that the survey team was able to be selective in choosing participants.

The study team's decision to choose its sample by asking volunteers to complete a demographic profile proved a wise decision. Not only could the team carefully select a sample based on self-reported relevant criteria, but also the aggregate data provided useful information about first-year college students' use of the Library.

Pre-testing is essential to uncover potential issues with wayfinding study designs. While the pre-testing employed by the team turned up several potential problems, more extensive testing would have allowed better recording of results. More attention should have been paid to how to best record data rather than focusing on the mechanics of conducting the sessions. Rather than using

student Library workers for the pre-test, it would have been more fruitful to have used subjects less familiar with the Library and its collections.

Rather than trying to fit user behaviors into a form describing an ideal solution to the task, the team learned that it was much better to capture behaviors in narratives that described in detail users' approach to problem solving. Audio or video recordings of the sessions would have been useful to ensure accurate reporting and to allow exact quotations of participant comments. However, these methods might have proven intrusive and have made participants self-conscious. At the very least, exact routes should have been noted on maps, as suggested by Lubans and Kushner.²⁶

While obvious failure points were demonstrated, the small sample size and variety of approaches to solving the assigned tasks did not lend themselves to numerical analysis. Since participants were not all presented with the same list of books to find, the obstacles they encountered varied. Moreover, users who ran into difficulties were prompted, and these hints served to inform subsequent attempts to find titles on the assigned bibliography.

In addition to demonstrating the utility of narratives for recording subject behavior, narratives proved an effective way to convey the challenges of wayfinding to Library staff who were not part of the study team. Through narratives and post-study photographs that recreated the point of view of the participants, many Library staff members were able to see their environment with new eyes.

Next Steps

Based on what was learned, the University of Chicago Library has developed a program that will create a comprehensive map and signage system for the Regenstein Library. A team trained in visual communications is currently developing prototypes that are being tested for effectiveness and ideal placement.

As a preliminary step to creating new maps and signs, members of the Library's Assessment Resource Group interviewed users to determine whether current terminology for Library spaces is meaningful. Those interviewed were asked what terms they use for specific Library spaces. Users were also asked about terms like "reading room" and "circulation" to see what these terms conveyed. Since participants were confused when they encountered multiple call number sequences on the same floor, the Library integrated four separate

collections made up of nearly 12,000 volumes into a single sequence on the Library's fourth floor. This will be done in other areas as feasible. When not possible to order collections into a single sequence, these collections will be clearly demarcated through signs and given a specific collection descriptor in the online catalog.

After the Library implements these changes, the study team plans to conduct another wayfinding study to assess the efficacy of the changes. The results of that study will then drive further changes. The Library plans to redo the wayfinding study at regular intervals to be sure that Library spaces remain usable to researchers, especially when spaces are reconfigured or additions are built.

In tandem with efforts to address wayfinding issues in the Regenstein Library, the University of Chicago Library plans to expand wayfinding studies to other campus libraries. Each of those libraries will likely present unique challenges to users navigating its collections.

Conclusions

This study proved a compelling reminder that our Library is not inherently legible and that finding a book is a complex task, comprising multiple steps each with its associated pitfalls. Moreover, like other institutions that have experienced additions and reconfigurations, the organizing principle behind shelving and floor arrangements may no longer be easily discernable to users.

Empirical wayfinding studies, like other forms of user observation, provide librarians with the opportunity to see libraries as users see them. Familiarity with a workplace can serve as a hindrance to recognizing obstacles to usability. Public services staff who are asked the same directional questions each day may become inured to these questions and fail to see them as indicative of a need to address obvious navigational issues. By following users as they seek materials, librarians can see with fresh eyes exactly what may make their collections so difficult to decipher.

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Assessing the Service Needs and Expectations of Customers—No Longer a Mystery

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Abstract

The University of Wollongong Library (UWL) adopted the Australian Business Excellence Framework (ABEF) in 1994, primarily as a change management model. The Framework provides descriptions of the essential characteristics and approaches of organizational systems that deliver sustainable and excellent performance, with emphasis on determining the needs and expectations of customers and evaluating their perceptions of excellent service. UWL regularly evaluates performance against the ABEF to identify areas for potential improvement. One area addressed less rigorously by UWL was customer perception of value. Additionally, the adoption of a 'mystery shopper' style evaluation of service delivery offered a new dimension to enable assessment of the quality and perceived value of services delivered by library staff. Measuring service quality through this approach has the capacity to underpin broad satisfaction ratings with genuine understanding of what library customers value.

Introduction

The University of Wollongong Library (UWL) adopted the Australian Business Excellence Framework (ABEF) in 1994 as a change management model. Created by SAI Global, the ABEF provides descriptions of the essential features, characteristics, and approaches of organisational systems that promote sustainable and excellent performance, with emphasis on determining and evaluating customer needs, expectations, and perceptions of excellent service. The 'customer focus' category of the ABEF encourages organisations to assess their ability to understand the needs and expectations of its customers, how customer relationships are managed, and customer perception of value.

Over the past decade, UWL has made extensive use of customer surveys and customer feedback systems as a means of evaluating satisfaction with

services and resources. These approaches have provided critical data and information on how clients rate their perceptions of the importance and performance of various service and resource elements. They have been an important mechanism for planned change and an improvement agenda. While surveys and feedback systems provide data and information on a range of service elements, they are limited in their capacity to provide information and insight into the perceived value gained by engaging with the library or the 'total customer experience' of a service transaction. Statistics, averages, and trend data are useful indicators of areas that are in need of improvement strategies. However, without more detailed, qualitative information, improvements may be misdirected and fail to target the real cause of customer discontent.

The introduction of a new element within the ABEF revealed an area addressed less rigorously by UWL was customer perception of value—that is, how customers perceived UWL's competency in meeting customer value goals or whether customers believed they received fair value for the 'investment' or cost of engaging with a service.

The adoption of a 'mystery shopper' style evaluation of service delivery offered a new dimension for the assessment of the quality and perceived value of services provided by library staff. The evaluation of services through mystery shopper methodology was first introduced in the UWL in 2004. This approach was selected to complement and expand on existing customer satisfaction surveys and other feedback systems by providing insight into the total customer experience, in particular the influence of staff attitudes, attributes, and behaviours on overall customer satisfaction and sense of value. Repeated in 2005, the mystery shopper assessment methodology was modified to target areas identified as requiring improvement from the previous year, and to ensure that mutually beneficial outcomes were likely to be achieved by

the mystery shoppers and UWL.

Measuring service quality through this approach can take the mystery out of what library customers value, which is often difficult to identify from broad satisfaction ratings. Findings from the University of Wollongong experience revealed the importance and value placed on how staff acknowledge, respond, and interact with customers; the knowledge, experience, and skill utilised; and the personalisation and customisation of services to meet the individual and unique needs of a diverse range of customers.

The ABEF in Summary

The Australian Business Excellence Framework (ABEF) provides a structured and integrated management system enabling the Library to build

on its earlier successes as well as identifying areas that had been addressed less rigorously. The framework provides descriptions of the essential features, characteristics and approaches of organisational systems that promote sustainable and excellent performance.¹ In describing the ABEF (see figure 1), SAI Global states:

Business Excellence provides organisations with a systematic and structured approach to assess and improve the performance of its leadership and management systems in the key areas of organisational capability, namely: Leadership; Strategy and Planning; Data, Information and Knowledge; People; Customer and Market Focus; Innovation, Quality and Improvement; Success and Sustainability.²

Figure 1—Australian Business Excellence Framework



For the successful integration of the principles of excellence, it was necessary for the Library to: develop and support increased responsiveness and flexibility in meeting customers' needs; train and empower its staff to deliver consistently high standards of service; and review process capability and the quality of delivered services and resources. The assessment dimension integrated within the ABEF encourages the critical examination of systems, processes and practices and is used to determine the Library's capacity for fulfilling its promise of quality, service and excellence.

Evaluating Client Satisfaction

The principles and descriptive items contained within the ABEF are 'designed to enable any organisation to . . . choose how it can best pursue business improvement, recognising the unique nature of each enterprise.'³ The ABEF, through its underlying principles, encourages organisations to: understand what customers value, now and in the future; and improve outcomes by improving systems and associated processes.⁴ These principles are explored in more detail in category 5 of the ABEF: Customer and Market Focus.

5.1 Knowledge of customers and markets <i>How the organisation ensures it has an ongoing understanding of the needs and expectations of current and potential customers</i>	• identifying the customers • understanding customer requirements • predicting future requirements • communicating customer requirements within the organisation
5.2 Customer relationship management <i>How the organisation manages and evaluates its relationships with customers</i>	• establishing customer value indicators and targets • ease of access • selecting and training customer contact staff • relationship management processes • establishing systems for collecting and responding to unsolicited feedback
5.3 Customer perception of value <i>How the organisation measures customers' perception of the value it provides</i>	• measuring whether customers believe they received fair value • competitor comparisons • meeting customer value targets

At the heart of this assessment category is the need to determine what customers want, and how organisations can go about providing valued services. It challenged UWL to think about the promises made to its customers and what these customers could expect in return for their investment of time, effort and money, e.g., student fees, tax dollars.⁵ Many libraries are interested in gaining a more comprehensive understanding of their customers' perceptions and attitudes to assess the quality of services and one way to collect and measure customers' attitudes to a library is through questionnaires.⁶

Internal and external benchmarking of mission critical activities is a major driver of the Library's quality, service, excellence program. Since 1995, the Library has utilised client satisfaction surveys as a key tool to better understand customer perceptions of services and resource provision. Since 2002, UWL has used a customer survey negotiated by the Council of Australian University Libraries (CAUL), enabling benchmarking with Australian and New Zealand university libraries. The major assessment categories to evaluate customer perceptions are: communication, service quality, service delivery, facilities and equipment, library staff. A key aim of the survey is to identify service and resource gaps. Data and information collected from the survey are used to inform planning and improvement initiatives across all levels of the Library.

A significant benefit from adopting this approach to evaluating customer satisfaction is the ability to monitor internal benchmarks of performance as well as to determining how the Library is positioned against its peers. Results of

the survey are an important indicator of the success of the Library's Quality, Service, Excellence program and this has been demonstrated through UWL's consistent positioning in the top quartile of performance across each assessment item and its position in the top ten⁷ performing libraries across the major assessment categories.

Customer Feedback Systems

Customer satisfaction measures with service quality, while extremely important, often ask customers to reflect on their service experience over a period of time. It is, therefore, not unusual that customer satisfaction is often considered to be a lag indicator of performance. The capacity to gather more immediate and timely information on customers' perceptions can provide further insights to service quality.⁸

At UWL, continuous customer feedback has been actively sought since 1995 with the implementation of a paper-based, Compliments, Comments, Complaints scheme. Forms are made available at all service points and, when contact details are provided, a response is guaranteed within five days. All customer feedback incidents and responses are documented, collated, and made available to all staff to generate awareness of customer needs and expectations. Feedback incidents are reviewed regularly to ensure minor issues are addressed immediately. A more formal review is undertaken twice yearly to monitor trends and to inform planning and resourcing strategies.

A review of the feedback process in 2004 drove the development of an innovative new system for the fully automated lodgement of feedback and

responses. The Client Feedback Database⁹ provides an intuitive online interface for customers to communicate with the Library. Expedient responses are supported by automatically directing comments to appropriate staff. As a result, response times have improved significantly from five days with the previous system to a guaranteed two days.

Finding What Affects Customers' Perception of Service

Customer satisfaction surveys and other feedback systems provide data and information on a range of service elements, however, they are limited in the insight they can provide into the total service experience, in particular the effect of staff attitudes, attributes and behaviours on overall satisfaction.¹⁰ Feedback from surveys does of course offer clues to guide further investigation.

Sector comparisons of customer satisfaction revealed that UWL could improve its position in some of the areas surveyed. In order to thoroughly investigate services, it was considered important to use a more in-depth survey strategy than those previously used. Another advantage of implementing an additional approach is that the use of multiple datasets provides an opportunity for triangulation of data and information by helping to ensure the efficacy and reliability of available data for interpretation and analysis.¹¹

Drawing on benchmarking experience with the private sector, it was decided to trial a different evaluation strategy using a tool known as mystery shopping. Mystery shopping has the potential to assess how well the agreed values of a library, as well as their associated behaviours, are being practised and the influence of behaviours on customer satisfaction.¹² This approach allows the investigation of the total customer experience, from first impressions, through to the use of resources and services, the reliability, consistency and accuracy of promised services, the responsiveness of staff, and the capacity to inspire confidence and trust.¹³

The concept of mystery shopping is founded on the use of researchers to act as customers to evaluate and report on the quality of the processes and procedures used in the delivery of a service.¹⁴ The 'shoppers' evaluate the service using predetermined criteria and document performance through the completion of a survey or questionnaire after each service transaction.¹⁵

Mystery shopping within the higher education sector is a relatively new and little explored

concept.¹⁶ Literature reveals that public libraries have been quicker to implement this type of methodology to evaluate service provision as compared to other libraries.¹⁷ Personal research through surveys with members of CAUL during 2005, revealed that only UWL had adopted this type of service evaluation in Australian academic libraries. This may be due to the ongoing debate as to whether students can be considered as customers, exchanging some form of investment in return for a service; yet it cannot be denied that students are actively involved in services provided by universities.¹⁸ The introduction of full-fee paying student places and rising HECS¹⁹ fees in Australia has resulted in students engaging with university services with a 'customer mind-set' and increasingly demanding 'value for money' for their investment in education.²⁰

Through the long-standing application of best practice standards and business excellence models which focus on the fulfilling the needs of customers and stakeholders, UWL was comfortable viewing students as customers (along with other users of the Library). The mystery shopper methodology had a positive alignment with Library Values²¹ and the principles of business excellence that inform the Library's approach to managing and improving service such as:

- Understanding what clients value, now and in the future, influences organisational direction, strategy and action
- The potential of an organisation is realised through its people's enthusiasm, resourcefulness and participation
- All systems and processes exhibit variability, which impacts on predictability and performance

The aim of adopting mystery shopping, therefore, was to take the mystery out of what Library customers' value, how the behaviours and attitudes of staff influence perceptions of value and quality; and the performance of processes underpinning service quality.

Prior to implementing this type of assessment, extensive consultation took place with staff to discuss what data and information was to be gathered and how results would be used. A key theme in the chosen communication strategies was the alignment of the exercise with the well established Library Values, against which staff performance is regularly evaluated, and the desire to reinvigorate a systematic and customer-focussed

approach to evaluation. In the initial mystery shopper assessment in 2004, all services in different formats were evaluated over a period of one month by students trained as mystery shoppers. Evaluation was based on the delivery of services using established criteria identified through advertised standards, by staff as important to measure, as well as integrating the shoppers' personal views of best practice in service.

Feedback provided by the shoppers focused on compliance, whether the evaluation criteria were met, as well as qualifying reasons for improvement, (e.g., "generally friendly and approachable," "prompt and thorough responses," "appreciated the concern shown by staff," "staff are sometimes rushed . . . gives the impression of lack of interest," "name badges obscured by scarves, hair, collars etc," "acknowledging people who are waiting," "show genuine interest in student needs"). These findings revealed the importance placed on the human dimension in excellent service, that is: how staff acknowledge, respond, and interact with customers, the knowledge, experience, and skill demonstrated and the personalisation and customisation of services to meet the individual needs of a diverse range of customers and stakeholders.²²

Why Use Mystery Shopping?

As mentioned earlier, UWL has been using customer satisfaction surveys for over a decade, and this form of evaluation continues to provide valuable trend data to inform decision making. Over recent years, while results have been high, they have remained relatively static. Surveys of other libraries that were placed higher than UWL in satisfaction rankings, provided limited information in terms of service differentiation. Mystery shopping provided a catalyst to revitalise the Library's approach to internal benchmarking by adding a new dimension for measuring the various elements within a process designed to deliver excellent service against predetermined quality standards.²³

The Library has had in place for a number of years a series of advertised service standards, now contained within a Client Service Charter.²⁴ These standards have been developed to reflect process capability and staff responsiveness aligned with customers' needs. The standards are measured and monitored by staff, through agreed performance indicators and measures. The beneficiaries of these

standards, the customers, have played a more passive role in measuring Library performance.

Mystery shopping, therefore, offers customers the opportunity to actively assess library performance against an agreed set of standards and criteria; it is an objective process of collecting facts rather than perceptions based on past transactions.²⁵ Importantly, data is being gathered in a real-time format, examining each transaction as a separate service incident made up of several elements, as opposed to a more homogenous approach in the interpretation of Library services that is offered through most customer surveys.²⁶

The Process

To evaluate the impact of implementing the recommendations from the evaluation conducted in 2004, three services were selected for re-testing in 2005: Telephone services, E-mail a Librarian and Chat to a Librarian.

Staff were informed of the intent to repeat mystery shopping through all staff and team meetings and Library Communication bulletins, and were invited to provide input to the selection of evaluation criteria. Many of the teams provided examples of the elements of service provision that they would like examined for example:

- Are we meeting the service standard?
- Are we effective when referring clients to others?
- Are we friendly, courteous, and helpful?
- Do we go the extra mile?
- Do we invite clients to use the service again?
- Is the language we use appropriate (especially for Chat and E-mail a Librarian)?
- Do we provide extra value in hints and tips or do we just provide the answer?

These requests were largely met through the design of the evaluation instrument and questions used in a follow-up focus group. While staff were aware of the evaluation period, they could not anticipate when mystery shopping would occur.

Student shoppers were recruited from the School of Marketing and Management within the Commerce Faculty with the assistance of a lecturer. The student cohort represented mostly final year students with an interest in organisational management. Students were selected from expressions of interest submitted via e-mail. Nine final year students were recruited to act as mystery shoppers, representing the faculties of: Commerce,

Education, and Health & Behavioural Sciences. Of interest, none had used Chat to a Librarian or E-mail a Librarian prior to their mystery shopping role.

Students, during a face to face meeting, were briefed on the aims of the evaluation and Library expectations of their involvement, and were invited to identify research topics they wanted to explore that would support their current assignment workload. This was identified as a recommendation for improvement from the initial mystery shopper project. Students in the first exercise found it challenging to ask for help in unfamiliar subject areas. In addition, staff expressed concerns about the time and resources required to answer questions that were unlikely to be used by students in their chosen educational fields, possibly at the expense of students with legitimate information needs.

Students were employed as casual staff of the Library while undertaking the evaluation. They received compensation for the time spent in meetings with the mystery shopper coordinator, time spent conducting the evaluations and an additional hour to cover telephone, and internet expenses.

The evaluation methodology was closely modelled on the approach chosen in 2004 to allow for comparisons of results where appropriate. The Mystery Shoppers evaluated the services up to three times over a period of two weeks during October 2005. Evaluation scenarios were prepared for each student outlining requisite evaluation criteria, while incorporating information needs for their selected assignments.

At the conclusion of the evaluation period, the mystery shoppers submitted their evaluation forms via e-mail. They were also invited to participate in a focus group or an interview at the conclusion of the project to offer their reflections on the experience of participating in the project and overall assessment of the services evaluated, and to provide clarification where needed on their notes.

Results

In a number of instances, the students noted high levels of performance against the evaluation criteria and a high degree of satisfaction with the services they assessed; many stated that their expectations of the service and responses received exceeded their expectations. The students felt that the services used in the project offered value for the investment of time in making an enquiry or

participating in a service transaction with the Library. While this was rewarding feedback, the aim of identifying service or performance gaps was fulfilled also.

An example of how the total service transaction was evaluated is offered in the findings for telephone services. This model was adapted for Chat to a Librarian and E-mail a Librarian, however, the findings for these services will not be discussed in detail in this paper.

Telephone service

The telephone service was evaluated seventeen times. Three major service themes were explored: payment of fines, group study room bookings and reference enquiries tailored to the students' research needs.

Timeliness of response

The Library has in place a service standard that telephone calls will be answered within five rings. This was achieved 94% of the time and 29% of calls were considered to be answered immediately. See the table below:

How long did you wait for the phone to be answered?

Immediately	29.41%
< 5 rings	64.71%
> 5 rings	5.88%

First impressions

Feedback from the 2004 mystery shopper project indicated that telephone greetings and staff responses were inconsistent and staff often did not provide their names when answering the phone. In response, telephone training techniques were revised and a new standard greeting introduced. The mystery shoppers were asked to rate their first impressions of how the telephone call was answered. See the table below. 88.24% of the students rated their impressions as good to excellent.

What were your first impressions of the way the phone was answered?

Excellent	23.53%
Very good	52.94%
Good	11.76%
Fair	11.76%

Two students rated their first impression as fair. Feedback to support this perception included: "No

name and sounded aggressive but then she got friendly as it went on.” The focus group findings revealed that some staff speak too fast when offering the greeting, so clients don’t always hear the staff name. The students offered the following feedback:

- Phone call didn’t take too long and she was very friendly and helpful. She explained step-by-step . . . maybe a little too quickly, but overall she did a great job
- Overall the service was efficient and easy to understand. Provided great service that was prompt and helpful. The only negative aspect was that they spoke quite fast, which may lead the customer to think that they are being rushed.
- It was a very pleasant transaction . . . Very good—offered positive options.

When asked if a more standard approach to greetings seemed too artificial, the mystery shoppers stated that they preferred this approach and particularly liked “How can I help you?” at the end of the greeting.

Was the staff member friendly/approachable?

Embedded within the Library Values and Ideal Culture is the notion of people first. Staff have identified the following behaviours that they would like to see demonstrated by their peers during all interactions with customers:

- Interacting with other people in a helpful and sincere manner
- Meeting the needs of others in a prompt, efficient, and pleasant manner

The mystery shoppers were invited to rate the friendliness and approachability of staff during the telephone transaction. See the table below.

Was the staff member on the phone friendly/approachable?

Very	58.82%
Yes	35.29%
A little	5.88%
No	0.00%

94% of the Mystery Shoppers rated the friendliness and approachability of staff highly. Examples of feedback included:

- Extremely helpful and professional in her phone manner. She was patient with my

questions and responded to my enquiry without hesitation and in a manner that made the atmosphere of the conversation quite comfortable. She made every effort to attend to my queries.

- She was bubbly and very helpful
- Sounded eager to help

Did you feel confident in their knowledge?

The mystery shoppers were asked to rate their perceptions of staff’s knowledge in fulfilling their enquiries. See the table below. 94% of the student shoppers were confident of staff’s knowledge in meeting their needs.

Did you feel confident in their knowledge?

Very	47.06%
Yes	47.06%
A little	5.88%
No	0.00%

Feedback from the evaluation forms included:

- I feel confident with her ability and knowledge.
- Staff were extremely friendly, helpful, and willing to spend additional time ensuring that I was able to navigate the library databases and make the most accurate search possible. It was also good to see that the library staff provided some sample resources to get me started. I would not hesitate to use this service again.
- It was reassuring to see staff made the enquiry personal with their responses tailored to the specific inquiry rather than making generic responses.

Did you feel welcome to ask again?

In addition to rating the importance of the greeting, students were asked to comment on how the telephone transaction concluded and, in particular whether they felt welcome to use the service again. 94% of the student shoppers indicated that they felt welcome to use the Library’s telephone services again. See the table below.

Did you feel welcome to ask again?

Very	52.94%
Yes	41.18%
A little	5.88%
No	0.00%

Feedback from the evaluation forms included:

- Based on this experience, I wouldn't hesitate to use this service again.
- If I still had trouble, then suggested getting in contact with the Librarian or call her back and she would help me do that.

Were you happy with the way that you were treated?

The mystery shoppers were asked to rate perceptions of their overall treatment during the telephone transaction. Of the three services evaluated, the telephone service received higher ratings than Chat to a Librarian and E-mail a Librarian. 100% (see table below) of the students

were happy with the way they were treated, with 65% indicating they were 'very happy' with the treatment received via this service.

Were you happy with the way you were treated?

Very	64.71%
Yes	35.29%
A little	0.00%
No	0.00%

A summary of common criteria across the three service areas is offered below. The values represent the percentage of shoppers evaluating the service.

Summary of findings

First impressions

	Telephone	Chat to a Librarian	E-mail a Librarian
Excellent	23.53%	12.50%	13.33%
Very good	52.94%	56.25%	33.33%
Good	11.76%	18.75%	40.00%
Fair	11.76%	12.50%	13.33%

Staff friendly/approachable?

	Telephone	Chat to a Librarian	E-mail a Librarian
Very	58.82%	18.75%	40.00%
Yes	35.29%	62.50%	20.00%
A little	5.88%	18.75%	13.33%
No	0.00%	0.00%	26.67%*

Confident in staff knowledge?

	Telephone	Chat to a Librarian	E-mail a Librarian
Very	47.06%	18.75%	20.00%
Yes	47.06%	68.75%	46.67%
A little	5.88%	6.25%	6.67%
No	0.00%	6.25%	26.67%*

Welcome to ask again?

	Telephone	Chat to a Librarian	E-mail a Librarian
Very	52.94%	25.00%	13.33%
Yes	41.18%	56.25%	60.00%
A little	5.88%	18.75%	6.67%
No	0.00%	0.00%	20.00%*

Happy with the way you were treated?

	Telephone	Chat to a Librarian	E-mail a Librarian
Very	64.71%	37.50%	33.33%
Yes	35.29%	50.00%	33.33%
A little	0.00%	12.50%	13.33%*

*These customers received blank e-mail responses

An unanticipated, but important outcome of the research was the identification of a 'bug' that resulted in the receipt of blank responses to some E-mail a Librarian enquiries. Of those students who experienced this problem, all stated they would not have used the service again except for their involvement in the mystery shopper exercise. This information been incorporated in a review of the E-mail a Librarian database software. Feedback also revealed the need to:

- Provide regular peer review of E-mail a Librarian and Chat to a Librarian responses to check for consistency and comprehensiveness of replies
- Improve the transparency of closing transactions for Chat to a Librarian
- Improve student awareness of Chat to a Librarian and E-mail a Librarian services
- Conduct refresher training in telephone techniques prior to the commencement of the academic year.

Benefits

Surveys and questionnaires play an important role in gathering data on perceptions, performance, and satisfaction with library services and resources. The interpretation and understanding of data generated from such surveys is often limited to a select few within the organisation, yet the responsibility for translating results into action, usually falls to the staff dealing directly with customers.²⁷ These staff are often required to develop strategies for improvement based on broader assessment items contained with surveys, such as:

- Library staff are friendly
- Service desk staff respond in a timely manner
- Library staff provide quality service
- Library staff are proactive in their dealings with me
- Library staff display professionalism

Mystery shopping has enabled the 'deconstruction' of these items by closely examining the processes underlying service as well as the personal attributes and competencies desired by customers in the delivery of service.²⁸ This has facilitated a more targeted approach to process improvement and has provided a new element to test the effectiveness of staff training and its application within the workplace.

Conclusion

The systematic use of customer surveys and feedback systems to assess satisfaction with services and resources are long-standing practices at UWL, integral to its commitment to the principles of business excellence. Both forms of assessment are important indicators to test the acceptance and integration of the Quality, Service, Excellence program by both customers and staff. Over time, with satisfaction levels generally high, the ability to isolate specific aspects of service which could be improved proved difficult.²⁹ UWL recognised the need to develop different approaches to capturing more detailed, qualitative information about its services, outside the somewhat artificial focus group setting. Adoption of the mystery shopper approach provided a new vehicle with which to objectively assess the various elements of service provision in a real-time setting.

Implementation of this approach has enriched the Library's capacity to contextualise data and information gathered through other forms of assessment. It has enabled staff to more effectively target improvement opportunities through the mystery shoppers' articulation of root cause of discontent through the deconstruction of the elements of processes designed to deliver excellent service.

Importantly, it has provided customers with the opportunity to be more actively involved in assessing Library performance, a practice that had been addressed less rigorously in the past. Mystery shopping has not only given customers a process for testing service delivery, it has provided UWL with a more rigorous and detailed means of evaluating the aims and standards communicated in the Client Service Charter and the Ideal Culture.

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Frequently Noted: Approaches to Analyzing Qualitative Research

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Abstract

Much of library assessment creates qualitative data which are inherently difficult to use, but provide substantive, persuasive information. The primary pitfall of the approach lies in the large amount of disparate data collected—data which is unstructured and difficult to organize, interpret, and present. Further problems arise in using the data to persuade and elicit change within the organization. Librarians are good at creating studies and gathering data; where we fail is in the analysis and management of the data. Good data are lost in an overwhelming jumble of paper, written notes, and quotes from test participants. Project leaders lose enthusiasm, projects lose momentum, and administrators lose faith. Project failure creates an organization in which assessment is seen as ineffective and irrelevant to daily work.

With Web usability and focus groups as models, the step-by-step process of creating a schema for interpreting the data, recognizing trends, consolidating the information, and reformatting it for presentation will be illustrated. In addition, techniques will be discussed for maintaining momentum among the assessment group and the administration. Finally, effective strategies for using qualitative data to promote action will be presented.

Introduction

Librarians usually have a nodding acquaintance with quantitative research methods, in and out of libraries. Many librarians know enough about what they don't know to hesitate to apply research methods to their own environments. At the University of Louisville, we've taken heart from other methods of assessment with less statistical rigor, but in fact more suited to our everyday

world. Developed by social scientists in the 1930s and quickly adopted by industry and marketing,¹ qualitative evaluation research is especially applicable in complex social situations, as in libraries, where countless, difficult-to-quantify variables apply and where interventions are difficult to isolate and control. The goal is not to discover data supporting development of theoretical frameworks; it is to understand a particular situation in an applied setting. Qualitative methods produce useful data that can inform the small decisions that librarians frequently make as they design and present user services. The University of Louisville's Assessment and Resource Planning Team employed qualitative methods like usability testing and focus groups to develop Web pages and modify services. We found the pitfall of this approach to be the large amount of unstructured data gathered. They are difficult to organize, interpret, and present, and can be lost in an overwhelming jumble of paper, written notes, and quotes from test participants.

With Web usability studies and focus groups as examples, we place particular emphasis on tactics in data management and analysis that have been effective for us in maintaining enthusiasm of project leaders, sustaining project momentum, and keeping the faith of administrators so that findings have maximum impact.

Planning the Project

A well-planned project is crucial to achieve buy-in at all levels and to promote change. Setting a good foundation in the planning stage allows all players (the assessment team, designers, administrators, and other librarians) to agree on the project goals and create a framework for analysis and implementation.

All assessment projects involve basic project management steps. Understanding, planning for, and executing these steps makes the daunting task of analysis far simpler. A key to successfully analyzing and acting on qualitative findings is breaking down the steps and having clearly defined goals for each step so they don't become obstacles. Adhering to these steps keeps the project organized; disorganization is a primary reason qualitative assessment and follow-up fails.

Write the Plan

You won't know where you're going unless you have a map. Putting your plan in writing forces you to look at the logic of your proposal and consult with your constituency before conducting your assessment. This is essential, but it need not be complicated. The more concrete your plan, the more credibility the project has. The planning process involves determining goals, assessing and allocating resources, determining procedure, creating a timeline, and writing and disseminating the results.

Statement of purpose and goals. A clearly stated purpose provides a foundation for the project—making sure everyone involved understands what you're doing and why. Write it down, disseminate it, adjust it, and agree on it. Throughout the project look back at it to make sure the efforts are fulfilling the stated purpose.

Resources. In determining resources, consider:

- How much time do you have?
- What in-house talent is available?
- Which parts of the project might need to be outsourced?
- Is there money for materials and incentives for usability participants?
- What is the schedule? Is it affected by external concerns, such as the start of the school year?

Selecting your team is a crucial step in creating effective buy-in and future follow-through. It should include people:

- who are well-versed in assessment techniques.
- who understand the technical issues at hand.
- who know the terrain (i.e., the service, the collection, etc.).
- who administer the techniques and work directly with the users.

A separation should be maintained between those who gather data and those whose work is being assessed. The personal investment and the potential for skewing the data are just too high.

Project methods. Many books describe methods both for focus groups and Web site usability studies. We recommend: *Designing Web Sites that Work* by Brinck, Gergle and Wood, *Web ReDesign: Workflow that Works* by Goto and Cotler, and *Focus Groups: A Practical Guide for Applied Research* by Krueger and Casey.²

Analysis. The goals of the assessment projects indicate the level of analysis need. Focus groups generate a huge amount of information making it easy to become distracted by tangential findings. Web redesign requires a large number of decisions. Focus on the answers to the initial questions. Exhaustive analysis may not be necessary to address simple issues such as changing loan periods. Complicated issues such as determining how users access electronic resources require comprehensive analysis.³

Use the goals of your project as a guideline for analysis. Several options for analysis exist. These will be outlined subsequently. Choosing a method depends on the amount of time for analysis. The more time spent in analysis, the more comprehensive the results. Evaluate each project with an eye to practicality. It is most important to complete the analysis promptly while meeting the goals of the project. It is realistic and reasonable to choose a simpler method if it gets the job done and meets your goals.

Deliverables. State which deliverable will be necessary for each of your constituents. Consider administrators, library staff, study participants, and the parent organization. By the time you do the data analysis, you'll have planned for what you are going to report and to whom. This preparation will lend you credibility and administrative support. Promising something to varied constituents holds you to the task and ups the ante to follow through on the project.

Plan for change implementation and management. Knowing who is accountable for implementing change increases the likelihood that something will come of your efforts. The project team must either have the authority to place this responsibility or the

written assurance that those who do, will.

Timeline. Having a concrete, realistic plan and a timeline keeps the project group on task and on schedule. Keeping focused maintains momentum. Meeting timeline goals builds enthusiasm among the project group and sustains credibility with administration.

Stay focused and on schedule. Don't let your project die in the detail tar pit. Assessment projects identify trends and generalities. Keep to the goals of the questions. Keep to your schedule. You can always go back after the project is done and plumb your findings to answer other questions.

Project Implementation and Results Analysis

After planning your project and picking a suitable method, the fun begins. Here the paths diverge considerably, and we discuss the interplay of methods and analysis separately for the two kinds of projects considered here.

Web Usability Methods and Analysis

The usability method used determines the evaluation scheme. Our discussion follows a set of usability methods that take you from requirements analysis through redesign and discusses how to format the data from each method for presentation to the relevant audiences.

User Profiles

User profiles gather data through interviews with actual users. These data can be used directly (with names removed) or used to create composite profiles. In either case, the profiles serve as a reference point; Prof. Smith represents the needs of faculty, Janie represents freshmen. The data give an idea of your audience demographics, how they access your site and what they are trying to do there. Scenarios modeled during the interviews provide a list of tasks the users would need to perform and reveal how they would do them. Observations could include:

- Which Web browser do they use?
- Do they use modem or broadband?
- Do they browse or search?
- Do they read the screen or click around?

These data supply the framework for designers

to determine technical constraints users face and also serve as rallying points in discussions. It helps to bring the focus back to the users in a concrete manner.

To analyze the data, determine an appropriate grouping schema. For example, at a university library you might make the following groupings: faculty, graduate students, undergraduate students, library staff, and non-university users. The demographic information could be presented in a statistical way, as could the number of people using a particular browser, etc. The qualitative section would include a list of common tasks, descriptions of how they approach searching for information online, and other comments they shared during the interview.

The audience for the data consists of the designers, the assessment team and the administration. The designers need to receive all the information. The data should be organized, consistent, and easily accessible. The profile format lends itself to easy access by including the same types of information in the same places in each profile. For the assessment group, data can be summarized as those tasks that each potential user might perform and information about how they approach Web searching. This would be the basis for determining how to approach further testing. The administration may need even less detail; a brief description of the exercise and bulleted findings might suffice and be just enough to keep them informed and interested.

Ideal Web Page Design

One approach to the conceptual design stage is to allow your subjects (students, faculty and library staff) to create their own mockups. In this exercise a representative group designs their ideal Web pages. First, participants create a list of everything they would need on the library's homepage and a list of items that other users might need on that page. Second, using large sheets of paper, markers, and sticky notes, each person designs a paper mockup of their ideal library homepage. These designs are the qualitative data to be analyzed.

The analysis would include:

- Creating a list of every element (catalog, hours, etc.) mentioned on each page.
- Noting wording variations and grouping similar items together. The wording variations provide an excellent resource for jargon-free headings and descriptions.

- Tallying the frequency of each element's appearance.
- Recording the placement of each element in terms of four quadrants: upper left, upper right, lower left, and lower right. For example, participants frequently place the logo or the library's name in the upper left corner.
- Observing how frequently the designs include elements such as search boxes, drop-down menus, and sidebars.

This information can be used by the designers to create a composite of the ideal Web page or the design prototype.

The primary audience for the results of this exercise is the design group. Both the analyzed results and the original user-generated sketches help the designers because they give the information in an organized fashion and in a contextual framework. Stage two of this method involves the designers creating mockups of the Web page. Mockups can be paper drawings or computer-based designs, but generally they are not fully functioning. The mockups are reformatted presentations of the data. The audience for the mockups includes the designers, the assessment group and possibly the administration. If the mockups are shown to the administration, then make sure they are as complete as possible—computer-generated and full color. The more concrete and real the mockups are, the less likely that there will be conflicts later in the design process.

Heuristic Walkthrough

A heuristic walkthrough has experts evaluate a Web site based on a pre-set list of criteria. Some elements may be absolute requirements, while others may be desirable elements. The analysis of this study is straightforward. You have a list of all the elements that meet your requirements and all those that don't. For any standards that are not met, you have an action list ready for the designers.

For problem areas, detailed notes from the evaluators should be provided as a subsection of the overall recommendations of the assessment analysis. For example, if unvisited links on the site are set to red as the default and evaluators commented that blue would be more appropriate, the recommendation should be followed by statistics ("four out of five evaluators. . .") and the exact comments noted by the evaluators. This backs up the recommendations with evidence.

Task Analysis

Once the necessary elements are in place, the working prototype is tested by subjects representative of your intended audience. Task analysis exercises verify how users approach common tasks and usually include having users talk as they work through the problems. Keep careful notes. Preferably have someone to facilitate and someone to take notes or use other recording methods such as videos, to keep track of user comments and actions.

The schema for organizing these data depends on which of these methods you use. In any case:

- Write down the subject's terminology.
- Whenever the subject chooses the "wrong" path, note the path actually taken.
- Note any patterns between subjects' wrong paths and terminology.
- Make sure that the subject has a chance to give open-ended feedback.

Analyzing these data can be tricky. You need a schema for handling the data uniformly. The original tasks can provide a good framework. List each question and indicate the results and comments from each participant. Based on this list, you should be able to recognize patterns: tasks that were completed correctly most of the time; words that subjects mentioned repeatedly that may or may not have been on the Web page; areas where people had problems completing the task. Base your recommendations for proposed changes on patterns, not on single instances.

The audience for the task analysis results is also the design group and formatting the material should be similar to that for the heuristic walkthrough: a list of recommendations backed up with statistics and anecdotal evidence.

The final draft of the Web page has the widest possible audience and is the ultimate expression of usability data. It needs to be completely functional and attractive. For presentation to administration, in addition to the page itself, you might want to include a one-page statement of the major changes to the page and references to the usability study data. That will reinforce the validity of the changes and underscore that the redesign has been a successful result of assessment.

Focus Groups

Focus groups are another qualitative method for gathering data to improve library services. Ample

literature exists on focus group design and practice. What is lacking is concrete, practical instruction on analysis of the massive amount of qualitative data generated by focus groups. A brief practical guide to focus group analysis for librarians follows.

Models of Analysis

Most librarians are short on time and support staff. Given time and personnel constraints, consider which of the following schema for analysis best suits your needs.

Ideally, focus group analysis involves the following nine points, illustrated by Beryl Glitz⁴:

1. Hold debriefing session to record impressions and review observer's notes.
2. Transcribe discussion tapes.
3. Review tapes to correct transcript and include debriefing/observer notes.
4. Determine topic categories for data coding.
5. Decide on coding system to be used.
6. Review complete transcript and code data.
7. Re-arrange data into categories.
8. Review and analyze each category for interpretation.
9. Prepare report.

Steps four through eight may be done in a variety of ways, depending on time, personnel, space, and what makes the most sense to those doing the analysis. Methods that involve

transcribing the tapes will be quite time-consuming. Typically one hour of tape requires three to four hours to transcribe.⁵ Transcribing is the soundest method; however, depending on the level of analysis needed to answer your questions, it may be sacrificed in the interest of time. A compromise is to have two recorders with laptops record the comments during the session and to use the tapes as a back up to review specific points as needed. The following methods indicate if transcription is used.

Margin Coding—Transcription

Develop a system of codes (alpha-numeric, color, category, thematic) to represent each theme identified by the questions or expressed by participants. Then code the transcript line by line. This can be done manually, by cutting and pasting in a word processing program, or via a software program (caveat: software programs typically require substantial learning curves and added expense). Organize themes by group for analysis.⁶

"Long-Table"—Transcription

Make two copies of the transcript. One copy is the master; the other is cut according to themes. Arrange cut strips on large pieces of paper, one for each theme, laid out on a series of tables or on the floor. Place non-pertinent themes in a box for future reference.⁷

Pros	Cons
Systematic	Tedious
Organized	Cumbersome
Comprehensive	Time-consuming (transcription)
Less risk of bias	Coding can become complicated
Verifiable	Can get "lost" in the data, especially if novice
Identifies all themes, creates pool of themes for future use	Can get lost in detail and lose focus
Visual (long-table method)	Requires dedicated space for long period of time (long-table method)

Computer Analysis—Transcription

Software programs help organize, manage and track data. This is usually used in conjunction with

margin coding and involves identifying selected terms or phrases. Common examples of programs are NUD*IST and The Ethnograph.⁸

Pros	Cons
Organized	Expense
May lend credibility	Learning curve
New skills and resources for library	May be more applicable to commercial, social sciences application, and overkill for library-scale projects
May improve efficiency	
Verifiable	

Inventory of Points Discussed—Transcription Optional

Write each question or theme on a separate sheet of

paper. Write down the main point of each comment according to theme. Indicate repeated comments on each sheet.⁹

Pros	Cons
Quick	Increased possibility for moderator/recorder bias
Gets analysis started	May lose some detail
Good for a novice	Less verifiable
Spontaneous	Not as reliable for complicated goals
Avoids transcription of tapes	Good if focus group goals are clear and specific

Moderator/Recorder Recall and Confirmation with Notes—No Transcription

Debrief immediately after each session to get moderator and recorder observations. Fill in notes, particularly non-verbal reactions, with moderator

comments. This avoids the process of transcribing tapes. This is best done if the sessions are being recorded by laptop in addition to tape recording. If a laptop is used, most of the comments can be captured, with the tapes serving as back up.¹⁰

Pros	Cons
Quick	Increased possibility for moderator/recorder bias
Gets analysis started	May lose some detail
Good for a novice	Less verifiable
Spontaneous	Not as reliable for complicated goals
Avoids transcription of tapes	Good if focus group goals are clear and specific

Being systematic is essential to keep from feeling overwhelmed and getting lost in the morass of data. Choose a method that fits your way of thinking and organizing information. Having a system keeps the analysis organized, on track, verifiable and, hence, credible. Credibility is essential to garnering

administrative buy-in and improving the odds of seeing changes come from your findings.

Look for Patterns

Focus group data tends to be disorganized. Berkowitz suggests looking for patterns during

analysis of any kind of qualitative data¹¹:

- What patterns and themes emerge in response to specific topics? How do these patterns (or lack thereof) help to illuminate the broader study question(s)?
- Are there any deviations from these patterns? If so, are there any factors that might explain these atypical responses?
- What interesting stories emerge from the responses? How do they help illuminate the broader study question(s)?
- Do any of these patterns suggest that additional data may be needed? Do any of the study questions need revision?
- Do the emerging patterns corroborate the findings of any corresponding qualitative analyses? If not, what might explain these discrepancies?

Common Analysis Mistakes

Beware of some common analysis mistakes, regardless of which method you choose.

- **Bias**—Bias may fundamentally flaw focus groups long before analysis begins. It may arise in the development of the questions or in selection of participants, recorders, observers, or analysts. Be careful not to merely create data to support your own convictions. Be open to the possibility that your pet desire may be lost based on your findings. Take comfort, you'll gain your colleagues' credibility if you gracefully let go. Avoid bias in analysis by sticking to a thorough and verifiable method and by using an objective data analyst. This may be difficult if the project team is small and few have to assume the role of many. In that case, analysis should be done by more than one person and checked by a third, if possible.
- **Trying to quantify**—Focus group research is not intended to give projectable results; participants are not necessarily selected at random, and the sample sets are too small. The results serve only a guide to trends and subjective opinions. Don't try to figure that if three people said X it can be projected that Y% of total population has the same opinion.¹²
- **Using focus groups as tie-breakers**—Don't expect to resolve standing problems with focus groups. They aren't the vehicle for it.¹³
- **Listening to the loudmouths**—Don't let the vocal or dominant personalities sway you into thinking that they represent the majority.

Likewise, be wary of dramatic statements. All statements must be weighed to get the big picture.¹⁴

Reporting Results

Regardless of the kind of assessment project you have undertaken:

Prepare a Report

Always do a final report written by someone who will be objective. The report serves three purposes: it disseminates findings, it is the permanent record for future reference, and it is proof of your work. What to include in the report is contingent upon the audience:

- How does the assessment fit in with institutional goals? What major events or foci are currently influencing library or university policies?
- Why is the assessment being conducted? Is there a problem to be solved? Are the assessment results being used as a public relations tool or a bargaining chip?
- What barriers are there to changing the status quo?
- How long will the data stay fresh? In order to create buy-in and effect change, data must be perceived as being current and relevant.
- What motivates the audience? The presentation needs to be tailored to the ambitions of the audience in order to persuade them to take action.

Any summary should include these sections:

- Summary of background and objectives.
- Brief summary of the major findings.
- Description of methodology, including numbers and locations of interviews, and characteristics of participants.
- Detailed findings.
- Conclusions.
- Clear recommendations.

Be concise and clear. Avoid jargon. Use quotes judiciously. They are powerful and memorable, but if they are wordy, they become filler. They also shift focus from the big picture, and can reflect analyst bias. Krueger has written an excellent summary on all levels of reporting and when to do which type.¹⁵

A full report of findings should go to all major stakeholders and project team members. Krueger also lists in detail the components of the full report.

Keep your audience in mind, though. Does your boss read paragraphs or just bullet points? Increasingly, a bulleted summary of major findings and actions may be more effective as people are becoming swamped with information. Long states, "Bulleted text focuses attention, organizes content, and simplifies conclusions."¹⁶

A full narrative report may not serve you nor be appropriate. An abbreviated report of major findings should go to all library staff and any stakeholders outside the library, such as university administration or information technology groups. Focus group participants or usability test subjects should receive a report letter that acknowledges their role and outlines major findings and plans for change. A public report may go on the library Web site, in newsletters, to secondary stakeholders, in a display within the library, or to secondary organizational administrators. Even if the results are incorporated into the new Web page, an executive summary and formal presentation will enhance acceptance and generate excitement.

Promoting Action Based on Data

In her article "Using Data to Persuade," Denise Troll Covey defines persuasion as motivating people to act on their convictions.¹⁷ Spurring action depends on how the project findings are received. Good planning and practices ensure project credibility. Administrative support gives an organization-wide stamp of approval, and, ideally, mandates change. Consistent work by the assessment group improves the likelihood of the project being received favorably by the organization at large.

In addition to considering the personalities involved, think about the constraints that may exist in the minds of the audience, such as concerns about time, money or the distribution of resources. As the presentation material is prepared, address each concern. Put the material in the context of the organization's goals. Validate the project findings with quantitative data or other previously collected data. This builds credibility and links your work with other projects, creating consistency and adding to a general atmosphere of assessment-driven change.

A fear of change acts as a formidable constraint. To combat this, plans for change should also subtly show how the changes will benefit the audience. A well-developed plan shows that the project is maintaining momentum which will, in turn, inspire continued action. Meet with key players

immediately to act on findings. Emphasize user-identified problems that employees understand. This validates their knowledge of users and the library environment. Moreover, employees want to respond to user dissatisfaction. Don't overlook small findings that can be addressed easily. It builds group enthusiasm to act quickly and get things done.

Finally, someone must be accountable for seeing the changes through. Who this is should be decided at the project planning stage with written support from administration. Decide then what the role of the assessment group is to be—just the messenger or a leader in change as well? It is best to separate the two; rely on those who are affected by the findings to contribute responses or take leadership for making changes. Again, thorough planning, documented support, clear divisions of labor and roles, skillful execution, unbiased analysis, and credibility in every phase of the project will help ensure that it will be successful and have concrete outcomes.

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Getting Started with Library Assessment: Using Surveys to Begin an Assessment Initiative

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Abstract

Developing a library assessment program is often a challenging task. Librarians and staff may question allocation of resources to assessment activities and feel threatened by potential results. This paper presents a case study for using library user surveys as the foundation for an evolving assessment program and related organizational development activities. While highlighting some findings from the surveys, the paper focuses on the “getting started in library assessment” experiences of the Library at the University of Illinois at Urbana-Champaign. Strategies employed by the Services Advisory Committee to promote assessment and begin to create a culture of assessment will be presented, as well as current plans, successes, and failures, and our assessment directions for the future.

Introduction

This paper is a case study on using library user surveys as the foundation for an evolving assessment program and related organizational development activities. Some findings from the surveys are presented but the focus is on the “getting started in library assessment” experiences of the Library at the University of Illinois at Urbana-Champaign (UIUC). Strategies employed by the Services Advisory Committee to promote assessment and begin to create a culture of assessment are presented, as well as current plans, successes, and failures, and our assessment directions for the future. Other research libraries are likely to find elements of the UIUC Library experience familiar and/or useful in understanding their own cultures of assessment and identifying strategies for the future.

Culture of Assessment

In their seminal 2004 *portal* article, “Creating a Culture of Assessment: A Catalyst for Organizational Change,” Amos Lakos and Shelly Phipps offer a framework for organizational culture change for building a culture of assessment. Citing their work with Betsy Wilson, they provide a baseline definition of a culture of assessment:

A Culture of Assessment is an organizational environment in which decisions are based on facts, research, and analysis, and where services are planned and delivered in ways that maximize positive outcomes and impacts for customers and stakeholders. A Culture of Assessment exists in organizations where staff care to know what results they produce and how those results relate to customers’ expectations. Organizational mission, values, structures, and systems support behavior that is performance and learning focused.

According to Lakos and Phipps, the characteristics of such a culture are:

- The organization’s mission, planning, and policies are focused externally—on supporting the customer’s need for access to information.
- How performance measures will be assessed is included in organizational planning documents, such as strategic plans and unit goals.
- Leadership commits to, and financially supports, assessment activities.
- Staff recognize the value of assessment and engage in it as part of their regular assignments. Individual and organizational responsibility for assessment is addressed

explicitly—in job descriptions or is otherwise communicated formally.

- Relevant data and user feedback are routinely collected, analyzed, and used to set priorities, allocate resources, and make decisions.

In addition, they propose the following support systems that enable a culture of assessment in libraries:

- Assessment activities are supported by a Management Information System (MIS) or Decision Support System (DSS).
- Services, programs, and products are evaluated for quality, impact, and efficiency.
- Staff are supported to continuously improve their capability to serve customers and are rewarded for this.
- Staff are rewarded for work and the application of new learning that demonstrates improved service quality or better outcomes for customers.
- On-going staff development in measurement, evaluation, and assessment is provided and supported.
- Units within the library have defined critical processes and established measures of success.
- Individual staff develop customer-focused S*M*A*R*T goals in an annual planning process and monitor progress regularly.

Lakos and Phipps go on to propose the necessary components for pursuing a culture of assessment:

- Leadership with clear and articulated purpose.
- Systems thinking that recognizes the big picture as well as the components and links among them.
- Open organizational culture of integrity built on trust.¹

The framework that Lakos and Phipps put forth is a useful foundation for developing a case study analysis of a particular institution's efforts and challenges in pursuing a culture of assessment. A case study of the efforts to pursue a culture of assessment in the UIUC Library follows.

Case Study: The Culture of Assessment at UIUC Library

Before exploring details of the assessment efforts at the UIUC Library, a short description of some of characteristics of the Library itself and its organizational culture will be useful as context.

Context

The UIUC Library is one of the world's great research libraries with vast collections, high levels of librarian subject expertise, and international prominence. Its ARL collections-size ranking is reported widely in campus marketing materials, faculty recruitment efforts, and even mentioned by student tour guides highlighting campus features for prospective students. Changes in technology, decreasing budgets, and evolving user expectations are, however, challenging historically successful practices. In her 2004 State of the Library address, UIUC's University Librarian Paula Kaufman stated that:

If we don't change some of the ways we operate, and if we don't change our expectations about support from the University, we will not continue to be successful . . . Now the new demands and expectations are coming faster and more furiously than ever before, and just as we can't muddle through financially, hoping that the budget will reach levels that are truly unattainable, we can't muddle through by clinging to traditions and modes of operating that no longer make sense.²

Library faculty at UIUC share the responsibility for the Library's future with library administration through the shared governance model that exists in the Library. In addition to a highly decentralized system of libraries (over forty library units occupy spaces in more than twenty-five campus buildings), the faculty culture in the Library is characterized by high levels of autonomy and individuality. Library unit heads, in particular, can act quite independently of any library-wide or library administrative review of decisions or actions in many areas. Librarians who join the library faculty from elsewhere are often surprised by the degree of autonomy.

The Library's faculty annual review and promotion/tenure processes includes heavy emphasis on scholarship and publication and many library faculty engage in research projects using local services, collections, and user groups as data for study. Unfortunately, while the results of these studies are published and even widely disseminated in the profession, because of the decentralized structure and culture of autonomy, local colleagues may remain unaware of the research and its potential local applications. Inconsistencies in reward structures (e.g.,

publishing an article about a potential innovative service may receive greater reward than piloting the service per se) and the lack of predictable planning processes (e.g., just after the Library finished a five-year strategic plan, the campus mandated a new approach to strategic planning and so the process began again) have in some cases impeded assessment efforts or—at a minimum—have not served as encouragement.

Assessment Efforts

The UIUC Library has conducted a number of general user surveys. The Library undertook Web-based user surveys and needs assessments in 1998 and 1999 using locally developed survey instruments. In 2000 and 2001, the Library participated in the LibQUAL+® initiative. The LibQUAL+® surveys revealed service quality and satisfaction scores that were high; however, many library faculty were dissatisfied because LibQUAL+® surveys did not gather data relevant to specific library units. These survey efforts provided interesting data but that is where it remained by and large—as interesting data.

Starting in 2001, the Associate University Librarian for Services, a newly created position, and the Advisory Committee to the Associate University Librarian for Services, a newly created committee, which is known commonly as the Services Advisory Committee (SAC), began to work more systematically on how to address the need for ongoing assessment in the UIUC Library (the first position and standing committee, respectively, to be charged to work in this area). In particular, the Services Advisory Committee's charge states that it provides guidance and advice to the Associate University Librarian for Services in areas including:

- How best to preserve our core service values while also stimulating progress.
- How to identify with precision what expectations our users have for our services.
- How best to meet these expectations through reallocation of resources and energies or other appropriate strategies.
- How to improve our support services (e.g., cataloging, acquisitions) in order to make us more effective in delivering services to all our users.
- Setting priorities for the AUL for Services.

Conversations around assessment were often complex and delved deep into organizational

values, history, and priorities. SAC grappled with the questions of what success in services means at the UIUC Library and how to select assessment methods, approaches, and tools that do not violate the values and principles of the organizational culture. A pilot attempt at a “secret shopper” approach to evaluating customer service demonstrated the importance of careful consideration of organizational culture in pursuing assessment. Upon reflection, it is clear that the “secret shopper” approach failed because it did not respect individual librarian autonomy and the importance of the involvement of individual unit heads in any unit-level assessment projects.

Budget reductions, resulting in cuts to libraries' open hours, served as the catalyst for returning to the method of user surveys, which had been previously acceptable within the organizational culture. Aware of the dissatisfaction with LibQUAL+® for its lack of unit-specific data gathering but also wishing to build on the success of other research libraries and hoping for some possibility of benchmarking data, SAC sought and received permission from the University of Washington Library to adopt and adapt its user survey.

Starting in 2004, the Services Advisory Committee undertook a three-year program of patron surveys to determine attitudes towards library services, facilities, and collections. The first group surveyed (spring 2004) consisted of graduate and professional students, followed by undergraduate students (spring 2005), and then faculty and academic professionals (spring 2006). Cognizant of the factors leading to resistance to assessment, the SAC worked carefully to be as transparent and open as possible in the process of developing and disseminating the surveys and the results. Library faculty were given opportunities to review and comment on the survey instruments before they were finalized. Raw data (with all individual respondent identifying information removed) are available on the Library's internal network, and analyzed results, summaries, and recommendations have all been widely disseminated and posted on a publicly-accessible Web site.³ Two library faculty members have served as unofficial coordinators of the surveys project and have catalyzed the SAC to continue its attention to this project even as membership on the committee rotated and attention waned at times.

The surveys have generally revealed, as did

LibQUAL+®, high levels of user satisfaction with library services and collections. User desires for increasing electronic access to information is strong throughout all groups. Graduate/professional students make the most intensive use of library resources, followed by faculty/academic professionals, and then undergraduate students. The undergraduate student survey revealed a strong value on “library as place” for students and the importance of access to library space for their academic pursuits. Faculty/academic professionals were most likely to indicate a preference for the library to continue to prioritize purchase and access to print resources. Experience with the survey results and acknowledged limitations of survey research methodology and the sampling method used have led the Services Advisory Committee to emphasize the informative value of trends and patterns in the data rather than specific scores or rankings.

Mid-way through the three-year cycle of surveys, the UIUC Library participated in the Association of Research Libraries’ program “Making Library Assessment Work: Practical Approaches for Developing and Sustaining Effective Assessment.” Steve Hiller and Jim Self, ARL Visiting Program Officers for library assessment, visited the UIUC Library in May 2005. This visit, sponsored by the Services Advisory Committee, prompted discussion about library assessment, provided an “outsiders” view of current assessment plans and projects, and helped raise interest in SAC’s assessment work.

Having completed the three-year cycle of user surveys, SAC is now discussing the lessons learned through managing the surveys and setting a course for the future. The first lesson has been a logistics and workload lesson—the work required to administer a survey is by and large not dependent on the number of survey takers but rather on the process itself. It would be better to administer one survey to all user groups every three years rather than one survey to one group each year for three years. The two project leaders have found the development-administer-analyze-disseminate cycle to be a bit treadmill-like when repeated annually. Little energy is left for encouraging use of the findings or for communicating the findings and impacts to the user communities.

The second lesson is related—upon receiving the data, librarians often express a desire to know something related or to see the data organized differently than they are. Future planning processes

will include greater input about what data librarians would like to have and how they hope to use it. The latter is particularly important because, though improvements have been made, the Library still struggles to integrate the user survey findings into decision-making. Ensuring that the survey is asking users about issues relevant to decisions that librarians are making should assist with this.

Successes and Future Directions

Many other factors have no doubt impacted the changes observed in the Library’s organizational culture with respect to assessment over the past five years and causation is always difficult to determine in complex systems; however, there are notable differences and good reasons to believe the differences are at least in part due to the user surveys project and the ARL program visit. Some indications of the progress towards a culture of assessment include:

- Results from the graduate/professional student survey (2004) were met with resistance and the survey methods and data analysis subject to unusual scrutiny. SAC’s responses were careful to honor people’s feelings while at the same time re-asserting the importance of assessment and the soundness of the methods and analysis. To underscore this, all of the raw data were made available to allow librarians to conduct their own analyses and the Web-based presentation of the data was made as interactive as possible (e.g., offering data relevant to a particular library’s users in addition to all library users). By the time of the undergraduate student survey (2005), librarians were asking for the results before the analysis was even completed. By spring 2006, other library committees had begun to pull out components of the survey results for use in discussions and planning.
- Assessment has captured the attention of library faculty leaders and they are making public statements about its importance. These are individuals who may or may not be in formal positions of leadership but to whom other library faculty look for direction and approval. Some of these faculty have donated graduate student resources to help bolster particular assessment tasks.
- As a result of the visit and recommendations in the Hiller and Self report to the Library, a short-term graduate assistant position was created to support the development of a central repository

of assessment activities and resources.⁴ Though the report called for a librarian assessment coordinator, this recommendation came at a challenging financial time and so the allocation of resources for even a graduate student represents the prioritization of assessment within the Library.

- Having received many requests for better access to data systems and reports, the Library Systems Office has begun work on a Web-based server for accessing a variety of statistical reports. Integrated library system data, information literacy services data, and ARL statistics data are the initial emphases of this project.
- The Library's May 2006 strategic plan states the goal to "Develop a robust assessment culture so that decisions routinely are based on appropriate data . . . Five-year goal: A full time assessment coordinator will be in place, as well as a tested series of data gathering tools and data targets that will enable the Library to determine the effectiveness of programs."⁵

In working to develop a culture of assessment at the UIUC Library through the user surveys project and the ARL program visit, two characteristics of the organizational culture have proven to be useful launching points: library faculty autonomy and librarian scholarship.

The user surveys project grew out of the Services Advisory Committee's discussions but became actual, instead of just a discussion topic, through the leadership of a single library faculty member who decided that she was going to do a survey of her users because of the hours cut-back and offered to expand this to the entire graduate/professional student population of the campus. Her decision—made as an autonomous faculty member and unit head—immediately changed the discussion from whether user surveys should be done to how this one would be done. Her leadership and mentoring inspired another faculty member to step up and assist in leading the initiative. In neither case was this responsibility assigned or formally adopted. As faculty, they took the approach to "just do it" and the organizational culture responds well to this sort of autonomous decision to lead in a particular arena. Though it was a committee decision to take advantage of the opportunity to participate in the ARL program visit, again the "let's just do it" ethos moved the committee past pondering all of the potential

issues, outcomes, objections, etc., and into planning mode for how to capitalize on the opportunity.

The second key factor is related to the first. Librarianship scholarship is valued within the organizational culture and the formal annual review and tenure/promotion reward structure. Publications based on the surveys have given credence to their findings and the Assessment @ UIUC Library Web site listing of library faculty publications on assessment projects⁶ has served to highlight the accomplishments of the library faculty in assessment. By aligning assessment activities with librarian scholarship, assessment is seen as in keeping with the organizational culture rather than in opposition to it.

The UIUC Library is now facing the question of how to sustain the path of creating a culture of assessment. The current momentum is forward-moving but not yet self-sustaining. To maintain this momentum will require more formalized leadership for assessment initiatives and broader participation among the library faculty. The Library's strategic plan includes a plan for a full-time assessment coordinator. The changes to the user survey planning process is one way that more librarians will become involved in the surveys and the assessment Web portal makes public that many librarians have been pursuing assessment projects individually or in small groups. Highlighting their work will serve to raise awareness of the breadth of assessment work underway while also creating opportunities for collaboration among different projects. Finally, the creation of a Web-based management information system will allow improved access to data and reports for easier incorporation into decision-making.

Conclusion

Returning to the Lakos and Phipps framework that has informed this case study, the UIUC Library has or is developing the necessary elements for pursuing a culture of assessment: leadership, systems thinking, and an open organizational culture. The greatest strides have been made in developing the needed support systems, particularly the development of a Web-based assessment infrastructure, with reliable data gathering, warehousing, and reporting; user surveys for evaluating the quality and impact of library services and collections; and the recognition of staff development and training needs in relevant areas.

The Library's leadership—both administrative leadership and faculty leadership—have committed to and allocated resources to support assessment activities. Results from the user surveys are recognized as valuable inputs for certain planning processes and decisions. More work remains to be done in establishing performance measures to be assessed, incorporating assessment formally into planning processes and documents, and establishing a routine process for collecting, analyzing, and using data and user feedback for prioritization, allocations, and decision-making. How these will come to be will result not only from application of theoretical frameworks and observing other libraries but also from a deep appreciation and respect for organizational culture and values.

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Endnotes

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A Leap in the Right Direction: How a Symbiotic Relationship between Assessment and Marketing Moves the Library Forward

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Abstract

In this paper, the authors show how a relationship between assessment and marketing developed at American University Library, how it led to an award-winning marketing campaign, and how it continues to inform joint assessment and marketing efforts that move the library forward.

The AU Library Assessment Team participated in LibQUAL+® in 2001. The undergraduate students' survey results were surprisingly negative, and prompted the team to conduct special focus groups in fall 2002. Further participation in LibQUAL+® 2003 and analysis of the results of university-conducted surveys confirmed the team's understanding of undergraduate perceptions of the library. All data indicated that undergraduates had a lower level of familiarity with the library and a lack of awareness of library resources and services.

Introduction

Assessment activities are never ends in themselves. Data from assessment can and should be put to work throughout the library, and marketing is one particular area that can benefit from this data. Assessment identifies user populations that would benefit from targeted marketing and also documents user awareness of library services. Marketing campaigns to these populations address gaps in understanding and forge meaningful relationships between users and the library. If marketing efforts succeed and users take advantage of services and resources, their increasing satisfaction can then be measured by further assessment, which in turn provides further evidence over time of the marketing campaign's effectiveness. In this paper, the authors show how a relationship between assessment and marketing developed at American University Library, how it contributed to an award-winning marketing campaign, and how it continues to inform joint

assessment and marketing efforts that move the library forward.

Assessment and Marketing Teams

In the team-based structure of American University (AU) Library, assessment and marketing activities are carried out by two eponymous teams (see Appendix A). The Assessment Team was the first of the two teams formed. It began functioning in 2000, shortly after the Library's reorganization into a team environment. The original purpose of the team was assessment of the team environment's impact on library services and staff morale. The team's mission evolved, however, into collection of information about user perceptions of the library. The membership of the team has always consisted of both library staff and library faculty, including the university librarian at one time. Team members are not professional statisticians, but have learned about data and assessment tools through experience and trial and error. In addition to conducting its own assessment efforts, the team is a resource on instruments and practices for other individuals and teams in the library.

The Marketing Team initially began in fall 2003 as an unofficial working group that consisted of three interested library staff members: a reference/instruction librarian, the development officer, and the senior reference librarian who has additional responsibilities for outreach. The assistant university librarian for public services joined this ad hoc group which then applied for official recognition from the library's coordinating Management Team. The team proposal was accepted and the membership expanded at that time to include additional library staff including two full-time library staff who were seeking graduate degrees in public communications (public relations) and a full-time library staff member majoring in graphic design in an undergraduate

degree program. From the beginning, the Marketing Team's mission was to improve users' perceptions of the American University Library.

Assessment Activities in 2002 and 2003

The Assessment Team's activities over the last six years have built upon past efforts to provide a growing understanding of user perceptions of the library. One of the team's first assessments was participation in the LibQUAL+® user satisfaction survey in 2001, when LibQUAL+® was still in development and consisted of fifty-six items and nine dimensions. While team members had some anecdotal evidence of user dissatisfaction, they were not prepared for the extent of the negative responses from undergraduates. Only six out of the fifty-six items garnered responses within the "range of tolerance," meaning that the library did not meet minimum expectations for the undergraduates on fifty items. (Five years later, the Assessment Team has concluded that the methodology used in distributing that survey may have skewed the results, but this phenomenon only became apparent after conducting LibQUAL+® in 2003 and 2005.)

Following the disappointing 2001 LibQUAL+® results, the Assessment Team decided to conduct three focus groups of undergraduate students in fall 2002. The focus groups were designed to provide more in-depth information about undergraduate students' perceptions of library services, resources, and facilities than LibQUAL+® could offer. Twenty-six students, most of them in their second, third, or fourth years at American University, participated in three focus groups. The director of the university's Office of Institutional Research, a neutral person unaffiliated with the library, facilitated the focus groups. Participants compiled lists of "quality factors" for a library that they then ranked in order of importance to them. They rated the library's performance on each factor, and then discussed why they gave the library that rating. Students also completed a survey about their library use.

The student participants' responses frequently indicated a lack of awareness about library services available to them, misperceptions based on inexperience, or gaps in their knowledge about how information was organized. For instance, students identified weaknesses in the book collection in disciplines that do not rely heavily on books, such as the sciences, and also in other areas with highly developed book collections. In one example, a student, unaware of better strategies, expressed

frustration because he could not find a poem listed in the library's catalog. Students identified age of the collection as a weakness although the library adds approximately 20,000 volumes each year. (The team suspected that newer volumes leaving the building more frequently through on-site loan and consortium loan may have contributed to this perception.) Students also perceived that the library closed earlier than other libraries even though the American University Library had the most open hours in a seven-member consortium of university libraries at the time. Many students were unaware of the library's instruction program of voluntary walk-in classes.

The Assessment Team made several recommendations about publicizing library services to combat some of these gaps in knowledge. "The library needs to engage in more aggressive public relations efforts, promoting the collections and services offered to the AU community," was a major recommendation of the team's July 2003 report based on the focus group findings. Not fully attuned to the option of marketing at the time, the team suggested library instruction sessions as the primary way to present information about the library to students. In library instruction sessions, information about how the library's collections reflected curricular strengths of the university, the number of books the library adds to the collection every year, and the late night hours it provides, could be effectively transmitted. Librarians, it was thought, could be utilized as instructors in how to find poetry and resources for students who need to know how information in different disciplines is organized and disseminated. Along with making changes in services to increase satisfaction, the Assessment Team acknowledged that the method of advertising those services needed improvement.

Again in 2003, the more experienced Assessment Team conducted the LibQUAL+® survey for a second time with a better understanding of what the results for undergraduate students might mean. According to the 2003 results, undergraduates continued to perceive library service to be at a lower level than other groups, but their answers were not so negative as to be totally mysterious, as they seemed in the 2001 results. Comments from undergraduates still addressed the perceived age, small size, and lack of depth in collections, as well as the need to have books available on the shelf at the time of need. (One student complained, for example, that "a full 1/3" of the books he needed were not on the shelves. The total translated into 5

titles.) The undergraduates rated the print book and journal collections below the minimally acceptable level, and their comments indicated again their difficulty in finding information. Undergraduates also rated the library the lowest on customer service compared to graduates and faculty, and expressed the highest expectations for the library facilities and service hours. In general, the results from the 2002 focus groups and the 2003 LibQUAL+® survey reinforced each other. Together, they provided relatively reliable information about undergraduate expectations for library collections and services and for gaps in undergraduate knowledge about the library's resources and services.

Assessment Team and Marketing Team Collaboration

From the beginning, the Marketing Team had recognized the importance of relying on the prior work of the Assessment Team and acknowledged this need in its team proposal. Though the Marketing Team began its work prior to a formal consultation with the Assessment Team, its members soon initiated a productive collaboration. The Marketing Team began this collaboration by communicating with the Assessment Team prior to the launch of its initial campaign in 2004 and again in preparation for the subsequent 2005 and 2006 campaigns.

When it initiated the planning process for the first formal marketing campaign for the AU Library, the new Marketing Team had to learn the process of setting up that campaign largely through trial and error, just as the Assessment Team had learned their processes through experimentation. Though one team member had participated in an Association of College and Research Libraries (ACRL) training workshop, none of the team members had any actual experience in developing a true marketing campaign. Few other academic library marketing models were available at that time to the team. Marketing seemed to be much more prevalent in the public library sector. Just as there were few models for marketing in libraries in an academic setting, little to no guidance existed for tying marketing to assessment.

With the hindsight that comes from experience, the Marketing Team would have engaged in a dialogue with the Assessment Team much earlier in the process of planning the first campaign. Because undergraduate concerns about the library were already well-known to members of the Marketing Team on an anecdotal basis and through a

collective knowledge of previous LibQUAL+® survey results disseminated by the Assessment Team, the Marketing Team identified its first target group as the undergraduate population of American University prior to consultation with the Assessment Team. The Marketing Team did, however, consult with the Assessment Team in order to obtain affirmation for the selection of undergraduates as a target group. The Marketing Team also wanted to ensure that the key messages under development for the initial 2004 marketing campaign would address undergraduate concerns previously identified through the 2001 and 2003 LibQUAL+® surveys and the 2002 focus group results. Those results offered far more precision than the anecdotal evidence which the Marketing Team initially used.

The Marketing Team probably would also have benefited from earlier feedback from the Assessment Team in another area. In the initial Marketing Team communication plan developed in fall 2004, the Marketing Team set a goal of improving undergraduate student "satisfaction" with the library by twenty percent. At the time, the Marketing Team was focused on developing the first marketing plan and understood the importance of setting goals and including some assessment. The goal of improving student satisfaction by twenty percent was, however, rather non-specific since an instrument for measuring that goal was not specified and the concept of "student satisfaction" was not linked to specific LibQUAL+® items.

The initial collaboration between the Marketing Team and Assessment Team proved to be a watershed event for the Marketing Team that altered future planning/thinking and led to a much more formal approach to incorporating assessment into the marketing process in subsequent years. Many members of the Marketing Team did not have previous exposure to LibQUAL+® and the initial collaboration was an important educational experience. After the Assessment Team introduced and explained LibQUAL+® methodology to the Marketing Team, the Assessment Team focused on conveying both the 2001 and 2003 LibQUAL+® results and the previously mentioned 2002 focus group report.

Those LibQUAL+® and focus group results essentially confirmed the Marketing Team's selection of undergraduates as targets for the marketing campaign. As indicated in Figure 1, the "red" areas of the LibQUAL+® Antarctica chart,

which indicate that the library is not meeting the minimum expectation for service, were extensive

for undergraduates, especially when compared with teaching faculty (Figure 2).

Figure 1. Undergraduate Results from LibQUAL+® 2003 for American University

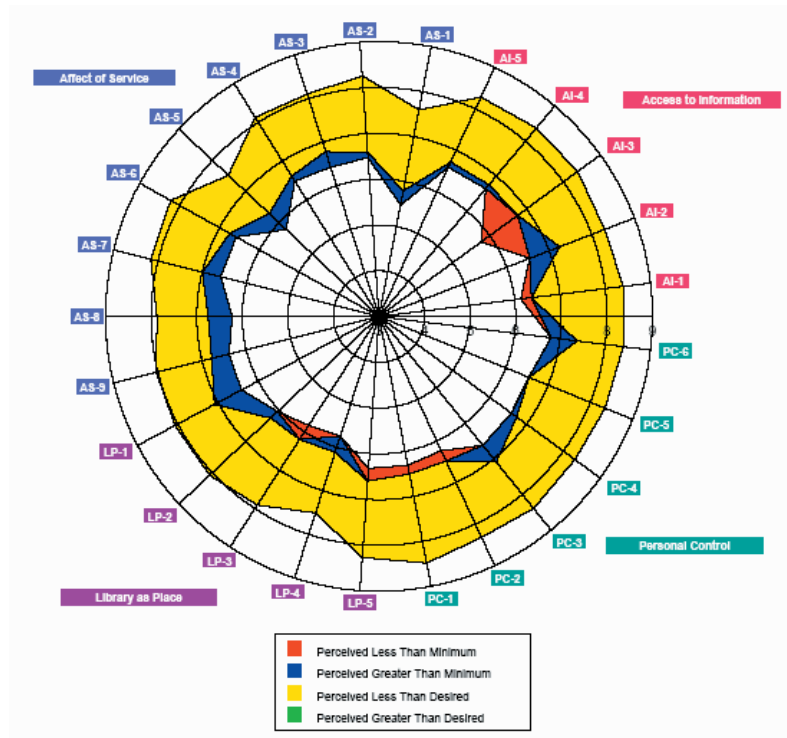
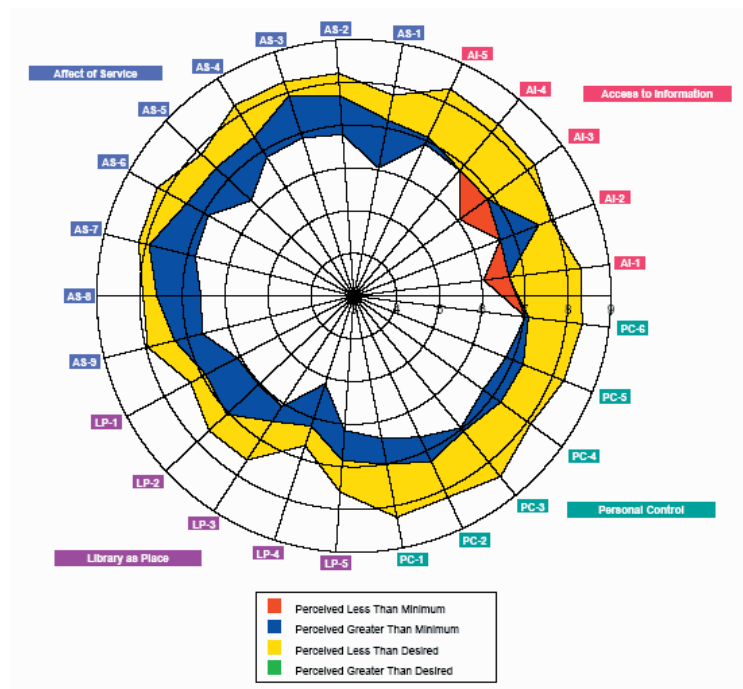


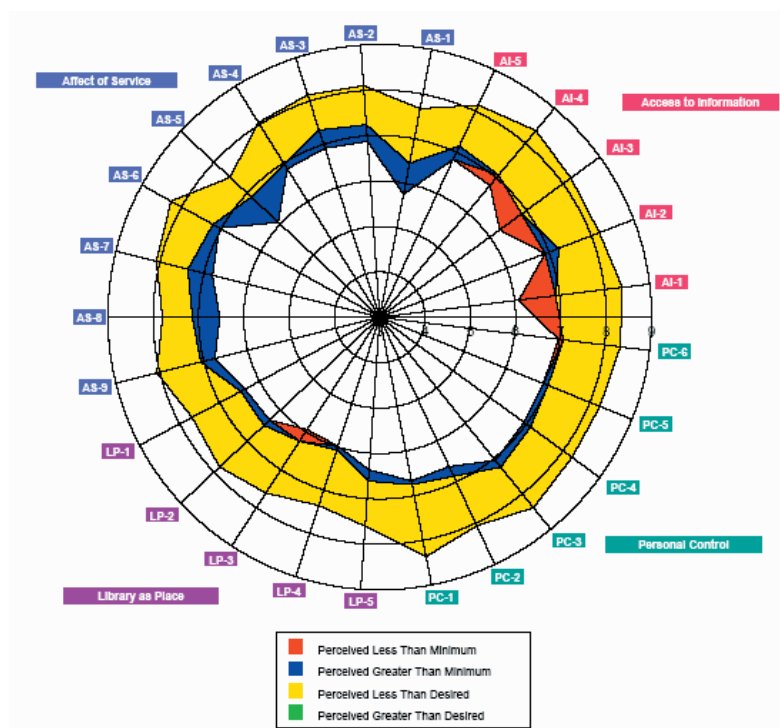
Figure 2. Teaching Faculty Results from LibQUAL+® 2003 for American University



The gap between undergraduates' perceived and desired levels of service, the "yellow" areas, were also larger in general than those of other groups such as graduate students (Figure 3). American

University Library's first-ever marketing campaign could, it seemed, potentially have the greatest impact on improving the perception of the library among undergraduates.

Figure 3. American University Graduate Results from LibQUAL+® 2003 for American University



In fact, undergraduate perceptions about the library as demonstrated in the 2003 LibQUAL+® results were one of the indicators that the Marketing Team used to make a major strategic decision. In order to change their perception of the library from "not meeting expectations" (red areas on the Antarctica charts) to "meeting more than minimum expectations" (blue areas), the Marketing Team decided subsequent to receiving information from the Assessment Team that the library should focus its marketing efforts on undergraduates for four consecutive years. In order to have any kind of significant impact on the perceptions of undergraduates as a whole, the Marketing Team decided that an entire cycle of undergraduates—students who would matriculate at the university for four years—would need to be recipients of marketing messages about the library, particularly its collections and services. Of course, LibQUAL+® results could also be used in the event that the

Marketing Team selected a different target group or decided to mount a partial campaign for another group.

One of the most significant impacts that the Assessment Team's support and education had on the Marketing Team was the development of themes and messages for subsequent campaigns. For the 2005 campaign, the Marketing Team revisited the 2003 LibQUAL+® results to assist with development of a campaign theme and of key messages. Again, in spring 2006 when the Marketing Team began planning for the fall 2006 campaign, it launched its 2006 annual planning retreat with a report from the Assessment Team. That report offered encouraging new data from the 2005 LibQUAL+® survey and pointed to areas in which (1) perceptions of the library could still be improved and (2) library users could benefit from becoming more knowledgeable about services and resources. In this planning retreat the significance

of using assessment information for marketing becomes even clearer. Even the retreat agenda was structured in such a way that the assessment results served as the genesis of some of the most significant components of its annual campaign, the overall theme and the “key messages” that appear throughout the academic year in a series of posters displayed across campus and on the shuttle buses that link the campus with the nearest Washington, DC Metro (transit) stop.

The LibQUAL+® results led the Marketing Team to discuss how awareness of services and collections is key to a perception of satisfaction with the library and also key to actually connecting students with staff and collection resources. Some of the undergraduate comments from students who had positive experiences with the library led to development of a theme about partnering or collaborating with the library. This theme of

achieving academic success through collaboration with the library was translated into a catchier tagline for an undergraduate audience, “Just add library.”

For the development of the key messages, as the chart below indicates, a direct correlation between the key messages and the LibQUAL+® results exists. The organic growth between the LibQUAL+® results and the key messages is clearly apparent in the process used by the Marketing Team. The key messages are developed first as general statements in “regular” language and then refined to appeal to undergraduate students. Essentially, the marketing messages are “translations” of the LibQUAL+® findings. As the text below indicates, the progression from LibQUAL+® items and findings to key messages is clearly visible.

LibQUAL+®	Marketing Team	Key Message
The printed library materials I need for my work The print and/or electronic journal collections I require for my work	Start research papers early/earlier to have what you need	Spend your all-nighters doing something else. Start your research early.
Readiness to respond to users’ questions Employees who understand the needs of their users Employees who deal with users in a caring fashion Giving users individual attention Willingness to help users	The library wants your suggestions both in the form of comments and in book requests.	Speak up. We're listening. (With tearsheet comment cards and book order requests on the poster.)
Making information accessible for independent use Making electronic resources accessible from my home or office Easy to use access tools that allow me to find things on my own Giving users individual attention Readiness to respond to users’ questions	You have access to information. You can improve your access to information by taking classes and using the library’s new instant messaging service.	Walk-in class. Walk-out smarter. The librarian won't know you're in your PJs.

LibQUAL+®	Marketing Team	Key Message
Library space that inspires study and learning Quiet space for individual activities Community space for group learning and group study A getaway for study & learning	We have the space you need.	Do you have a quiet floor?
The printed library materials I need for my work The electronic information resources I need The print and/or electronic journal collections I require for my work	General promotion of book collection (size, etc.)	We have 1,000,000 more books* than you do. (*and LP's, eJournals, DVD's, etc.)

In addition to the direct connections between Assessment Team projects and the 2004, 2005, and 2006 marketing campaigns already described here, another significant event underscored that relationship. Without the prior and ongoing work of the Assessment Team, the Marketing Team would have been unable to address the specified requirements for an Association of College and Research Libraries (ACRL) award. In 2005, ACRL launched an award for "Best Practices in Marketing Academic and Research Libraries @your library®." American University Library's marketing efforts placed first in this national competition due in large part to the Assessment Team's support for the Marketing Team.

The guidelines for the award required entering libraries to address several criteria. According to those criteria, a marketing plan must be both "responsive" and "measurable." As the following excerpt from American University Library's portfolio indicates, the Library's marketing plan was responsive in addressing student concerns articulated in the LibQUAL+® survey:

The undergraduate perception of the library was already well documented because the Assessment Team had conducted several major projects to measure user perceptions and needs. This information was essential to Marketing Team planning. . . . The Assessment Team oversaw the university's participation in the Association of Research Libraries' LibQUAL+® survey process in spring, 2001 and spring, 2003. The resulting data revealed that while library users found library staff to be especially

helpful, they echoed concerns that had been expressed for many years about the library collections and facilities. The results revealed a general lack of understanding about and awareness of library services. . . . To take greater advantage of the Assessment Team's many successful efforts, however, the Marketing Team initiated a formal series of meetings and other communications with the Assessment Team as part of the planning process for the overall marketing program and current campaign to ensure alignment with Assessment Team findings about the undergraduate population.

Similarly in the required section on a "measurable" campaign, the Marketing Team described its future relationship with the Assessment Team:

In the future the latter survey and regular participation in periodic LibQUAL+® surveys will provide additional evidence of the effectiveness of the fall, 2004 campaign in the context of the long-term marketing program. The same assessment tools will assist in tracking long-range changes in the library perception of students who first matriculated in 2004 and will graduate as the class of 2008. These surveys will determine if the fall 2004 campaign has effectively reached a goal of increasing undergraduate student satisfaction with and use of library services by at least twenty percent (20%) during the next four years.

Marketing Leads to Further Assessment

The AU marketing campaign drew on assessment data to identify a long-term target group and to identify key messages and themes. The other side of the cycle is turning back to assessment to see if the effectiveness of the marketing campaign can be determined. Determining such effectiveness is difficult to achieve. If student perceptions of the library rise within two years, factors that affect this perception may or may not be directly due to marketing efforts. But through a combination of LibQUAL+® data and more targeted assessments for specifics, the Assessment Team may eventually come to an understanding of how marketing is affecting students' perceptions of the library.

The LibQUAL+® survey for 2005 presented the

first opportunity to see the possible impact of the marketing campaign. A random sample of students and faculty were surveyed during Spring Semester 2005 after the initial marketing campaign had been underway for a semester and a half. An upward trend in perceptions of the library among undergraduates seems to be apparent when results for undergraduates in 2003 and 2005 are compared.

In 2003, 148 undergrads took the survey, and in 2005, 157 participated. The discipline breakout of respondents and the age and gender data were similar. The one factor that could have had some impact on the results was a more even distribution of respondents across all four years in 2005 as opposed to 2003, when the largest group of respondents were in their first year at AU (Figure 4).

Figure 4. Demographics from LibQUAL+® 2003 and 2005 for American University

User Group	Respondent n	Respondent %
Undergraduate		
First year	101	18.43%
Second year	4	0.73%
Third year	16	2.92%
Fourth year	22	4.01%
Fifth year and above	1	0.18%
Non-degree	4	0.73%
Sub Total:	148	27.01%

User Group	Respondent n	Respondent %
Undergraduate		
First year	49	11.67%
Second year	27	6.43%
Third year	32	7.62%
Fourth year	40	9.52%
Fifth year and above	7	1.67%
Non-degree	2	0.48%
Sub Total:	157	37.38%

One possible conclusion could be that sustained contact with the library over time would increase student satisfaction and that accounts for an upward trend in perception. But this may not necessarily be the case, and, in fact, if library service were poor, sustained contact could lead to more negative results.

The teams may have a better understanding over time as to whether an imbalance in class distribution affects American University's LibQUAL+® results. Regardless, the LibQUAL+® results thus far are encouraging. Basic library use

data from the two years (Figure 5) shows that in 2003, 8.78% of the undergraduate participants said they came into the library daily, and in 2005 that number had jumped to 12.10%. In addition the "never" use category dropped from 4.73 to .64% over those two years. Another indication that trends are going in a positive direction is the figures on use of the library Web site. The numbers for daily use remains the same in 2005 as in 2003, but "weekly" use increased while the figures for those who reported using the library only on a "quarterly" basis or "never" dropped. Of course,

that decrease is accompanied by a large jump in use of Google and non-library Web resources in both 2003 and 2005, but it is not clear that some of the students using Google daily are also not using the library Web site daily or visiting the library building regularly. The onsite and Web use data are probably more useful for gauging whether students may have been affected by a marketing campaign.

Figure 5. Library Use Data from LibQUAL+® 2003 and 2005 for American University

	Daily	Weekly	Monthly	Quarterly	Never	n / %
How often do you use resources on library premises?	13 8.78%	60 40.54%	49 33.11%	19 12.84%	7 4.73%	148 100.00%
How often do you access library resources through a library Web page?	22 14.86%	76 51.35%	32 21.62%	13 8.78%	5 3.38%	148 100.00%
How often do you use Yahoo(TM), Google(TM), or non-library gateways for information?	97 65.54%	43 29.05%	4 2.70%	1 0.68%	3 2.03%	148 100.00%

	Daily	Weekly	Monthly	Quarterly	Never	n / %
How often do you use resources on library premises?	19 12.10%	64 40.76%	58 36.94%	15 9.55%	1 0.64%	157 100.00%
How often do you access library resources through a library Web page?	23 14.65%	90 57.32%	34 21.66%	8 5.10%	2 1.27%	157 100.00%
How often do you use Yahoo(TM), Google(TM), or non-library gateways for information?	124 78.98%	26 16.56%	5 3.18%	1 0.64%	1 0.64%	157 100.00%

Some more general results relating to overall satisfaction with the library and information literacy questions also show an upward trend in

perceptions among undergraduate students from 2003 to 2005 (Figure 6).

Figure 6. Overall Satisfaction and Information Literacy Data from LibQUAL+® 2003 and 2005 for American University

2003

Satisfaction Question	Mean	SD	n
In general, I am satisfied with the way in which I am treated at the library.	6.61	2.09	148
In general, I am satisfied with library support for my learning, research, and/or teaching needs.	5.59	2.31	148
How would you rate the overall quality of the service provided by the library?	5.70	2.04	148

2005

Satisfaction Question	Mean	SD	n
In general, I am satisfied with the way in which I am treated at the library.	7.13	1.72	157
In general, I am satisfied with library support for my learning, research, and/or teaching needs.	6.28	2.04	157
How would you rate the overall quality of the service provided by the library?	6.44	1.69	157

Figure 6. Overall Satisfaction and Information Literacy Data from LibQUAL+® 2003 and 2005 for American University (continued)**2003**

Information Literacy Outcomes Questions	Mean	SD	n
The library helps me stay abreast of developments in my field(s) of interest.	4.80	1.98	148
The library aids my advancement in my academic discipline.	5.34	2.07	148
The library enables me to be more efficient in my academic pursuits.	5.59	2.16	148
The library helps me distinguish between trustworthy and untrustworthy information.	5.44	2.12	148
The library provides me with the information skills I need in my work or study.	5.39	2.04	148

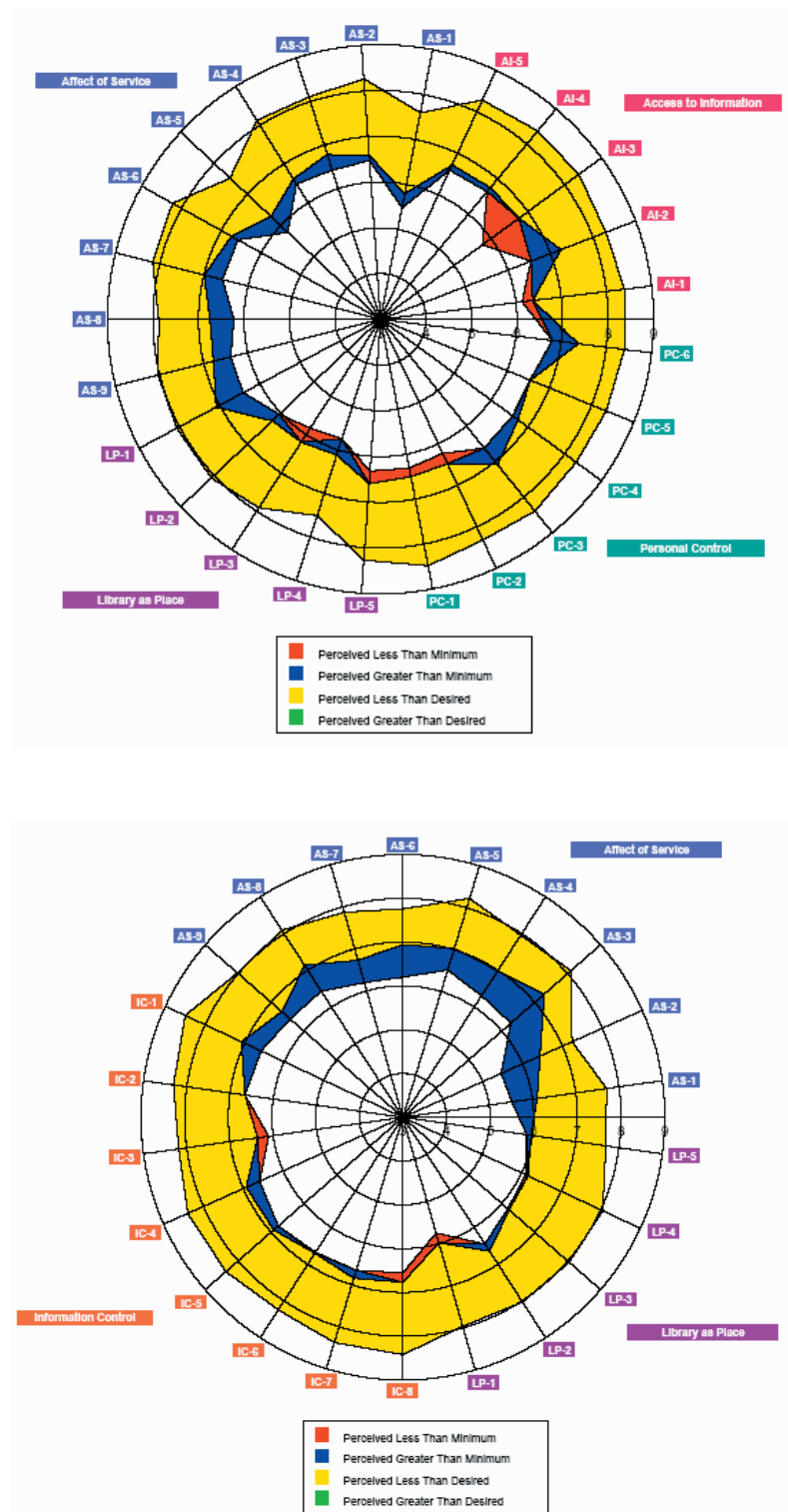
2005

Information Literacy Outcomes Questions	Mean	SD	n
The library helps me stay abreast of developments in my field(s) of interest.	4.93	2.02	157
The library aids my advancement in my academic discipline.	5.90	2.04	157
The library enables me to be more efficient in my academic pursuits.	6.13	2.12	157
The library helps me distinguish between trustworthy and untrustworthy information.	5.71	2.03	157
The library provides me with the information skills I need in my work or study.	5.78	2.01	157

Overall, LibQUAL+® Antarctica charts (Figure 7) for undergraduates from 2003 and 2005 show less red in 2005, indicating that American University Library is closer to meeting undergraduates' minimum expectations for service in many of the same areas (many of the questions from 2003 to 2005 are the same questions but in different dimensions in the two years). Also, in the "Affect of Service" areas the chart shows more blue, meaning that in 2005 American University Library is closer

to achieving students' desired level of service than in 2003. It should be noted too that for undergraduates the minimum service expectations dropped from 2003 to 2005 while the desired level of service remained about the same for many areas. This drop could also be an indication of greater satisfaction. Minimum expectations may be greater if student perceptions about the library are more volatile.

Figure 7. Undergraduate Results from LibQUAL+® 2003 and LibQUAL+® 2005 for American University



If the 2005 LibQUAL+® results do not prove to be an anomaly, a determination which can be made only after additional LibQUAL+® surveys, one can conclude that undergraduates are generally more satisfied with library service after the marketing campaign than before the marketing campaign was launched. Does this mean that the marketing campaign was effective? This conclusion cannot be made with any certainty yet because any number of factors other than targeted marketing could have increased student satisfaction between 2003 and 2005. One survey cannot be a conclusive indicator of how effective the first marketing campaign was. But the results are encouraging nonetheless, and no survey results indicate that marketing to undergraduates is having a negative impact. American University Library will conduct LibQUAL+® again in spring 2007. Those results will be closely scrutinized for trends in undergraduate satisfaction.

In order to get more specifics about what LibQUAL+® results might mean, it helps to combine them with other kind of assessments, like the focus groups conducted in 2002. The Assessment Team approached the Marketing Team about doing a short, Web-based survey to supplement LibQUAL+® and perhaps give more direct feedback about how marketing efforts are working. The two teams met to discuss what the Marketing Team wanted to know about their effectiveness and to talk about the goals of the 2004 campaign. Based on that conversation, the Assessment Team has developed a seven-question Zoomerang Web survey that would indicate student awareness of each “prong” of the campaign: a fall gift of a beverage container to all campus residents, a yearly prize drawing for attendance at walk-in classes and other instructional sessions, and a poster series with key messages that appear throughout the academic year. The survey will be available on the library’s Web site for two weeks in early November and will be advertised through campus communication outlets. Even though the participants will be self-selected and may include other demographic groups (which will be separated out), it still should provide some direct feedback that will help the Marketing Team adjust their activities. Then, through LibQUAL+® and other assessment methods, the cycle of assessment and marketing will continue.

Conclusion

In contrast to the situation that existed in 2003, when the Assessment Team recommended library instruction as the primary avenue for correcting undergraduate misperceptions about the library and for improving communication to that group, the Assessment Team now has a new partner in the Marketing Team. While library instruction programs can continue to serve as vehicles for meeting the needs discovered in LibQUAL+®, the Marketing Team can strive to reach a larger audience with greater uniformity. The ongoing collaboration between the two teams will ensure that the Marketing Team will always have sufficient information on which to base its campaigns. Rather than relying on largely anecdotal impressions, the Marketing Team will have reports generated from Assessment Team data and findings. Those reports will make the data and findings accessible.

Additionally, the Assessment Team can also assess the Marketing Team efforts, a process already begun in fall 2006. Both teams look forward to the results of the Zoomerang online survey, on which they have collaborated to collect information about student awareness of Marketing Team activities. Most importantly, the improvements in student perception of and understanding about the library between the 2003 and the 2005 LibQUAL+® results indicate that the two intervening marketing campaigns may have contributed to these important changes. At this juncture it is not possible to separate the influence of the marketing campaign from other factors. But the overall and rapid improvement between the 2003 and 2005 LibQUAL+® results suggest an increase in student satisfaction and student awareness due at least in part to marketing.

The Assessment and Marketing Teams have developed a symbiotic relationship that reinforces each team’s work to the overall benefit of the library and its users. Assessment data helps identify target populations for marketing campaigns, assists in the development of key marketing messages, and provides information about the continued value of marketing campaigns. Marketing provides Assessment with an outlet to translate findings into active, creative responses that seek to address gaps in knowledge and awareness of library users. The give and take of the Assessment/Marketing cycle allows the library to develop and nurture long-term relationships with

students as a way of fulfilling its academic mission. broaden its impact throughout library services.
The interaction between the two teams also serves
as a potential model for other libraries that wish to
make more effective use of assessment data and to

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Assessment in the Emory University Libraries: Lurching Toward Sustainability

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Abstract

In 1996, in order to improve internal communication and decision making, the General Libraries at Emory University began a comprehensive organizational review and redesign process. In the resulting reorganization in 2001, the library introduced the Office of Program Assessment and Coordination, charged with library assessment and process improvement. Additionally, lateral coordination and alignment of processes across the library was established through the newly created Market Councils. This paper will trace the development of the Office through significant staff turnover, interim administrative arrangements, and a campus wide strategic planning initiative that lead to the revitalization of library assessment activities. The authors describe the eventual creation of the position of Library Assessment Coordinator and the evolution of its placement in the organization as part of a newly established Office of Library Planning and Assessment in the fall of 2005.

Emory University and Its Libraries

Emory University in Atlanta is home to nine major academic divisions, numerous centers for advanced study, and a host of nationally known affiliated institutions. In addition to Emory College, the University encompasses a graduate school of arts and sciences; professional schools of medicine, theology, law, nursing, public health, and business; and Oxford College, a two-year undergraduate division on the original campus of Emory in Oxford, Georgia. Emory was founded at Oxford by the Methodist Church in 1836. Led by current President James W. Wagner, the University has 11,300 students and 2,500 faculty members who represent all regions of the United States and more than 100 foreign nations.

Emory's libraries include the General Libraries, Health Sciences Center Library, Law Library, Oxford College Library, and Theology Library. Overall, the libraries employ approximately 300 staff members, contain 3.1 million volumes, and have a combined annual budget of more than \$29 million.

The General Libraries includes the Robert W. Woodruff (Main) Library, Business Library, Chemistry Library, Manuscript, Archives and Rare Book Library (MARBL), Mathematics and Science Center Reading Room, and the Music and Media Library. The General Libraries employs a staff of approximately 170, of whom sixty-two are librarians or other professional staff and 108 are support staff. The planning and assessment initiatives and activities described in this paper focus on activities in the General Libraries.

Library Organizational Redesign and Reorganization

On October 2, 1996, then-Vice Provost and Director of Libraries, Joan Gotwals, announced the appointment of a Library Design Team. As she described it, the team faced "a challenging and imposing task in developing organizational design options for the library as we seek to become ever more responsive to our users in the changing information environment." Only in hindsight could one see just how accurate her characterization was, with the final proposal and organizational debut occurring on March 1, 2001.

The goals for the new library design included developing an organization in which:

- 1) The focus is on the customer;
- 2) There is a clear and widely understood vision;
- 3) Teamwork and partnership are highly valued;
- 4) Decisions are made at the appropriate level; and
- 5) Education and training are continuous.

While the reorganization did not involve the explicit terminology of a culture of assessment, its goals were in alignment with many of the prerequisites for creating a culture of assessment as identified by Lakos and Phipps, including the fact that "all services should be evaluated from the perspective of customer expectations," "each unit should understand which processes it owns, identify standards of service that customers expect, and continuously assess whether the current processes can be improved," and "continuous learning is becoming part of the job of each person."¹

In the 2001 design implementation, the Office of Market Integration was created under the leadership of Jane Treadwell. The components and work of the Office are described in the organizational structure document as follows:

III. Market Integration

A. Market Integration coordinating group. This is new work and accounts for additional staffing needs. Membership includes the Market Integration leader, and Humanities, Social Sciences, Sciences, Undergraduate and Area Studies Market Analysts.

B. Market Analysts. Market integration takes place on behalf of these markets: Humanities, Social Sciences, Sciences, Area Studies, Undergraduate Students, and the Goizueta Business School. This group markets library services to customers. It is the home of research and development and market assessment. Research and development in this unit is distinct from the development/fund raising work of the Development Office. The projects in this unit are developed in response to user assessment, national initiatives and the creativity of library staff. The unit also assists in the transition of projects which become library programs.

Responsibilities:

1. Ensure the integrated promotion of library services to the market;
2. Evaluate market/customer needs and expectations and how the library is meeting them;
3. Integrate customer needs into the entire

library's work;

4. Gather data about work processes with the aim of assessing and improving library products and services;
5. Plan and support research and development projects.

C. Market Councils. Membership of each council includes the appropriate analyst and at least one member of Information Resources, Technical Services, User Services, Access Services, Systems, and where appropriate, Special Collections. This membership is standing, but constituted as needed by issues. There are six councils: Humanities, Social Sciences, Sciences, Area Studies, Undergraduate Students and Library for the Goizueta Business School. The purpose of these groups is to improve functions and processes across the organization in service of the market.

Responsibilities:

1. Communication between units across processes on behalf of market;
2. Proactive planning;
3. Dilemma management;
4. Decision making;
5. Issue identification.

By the end of 2001, the library had moved away from the idea of formal Market Analysts as separate new positions, the Market Councils had been established mostly as described, and the Market Integration Division had been renamed the Office of Program Assessment and Coordination (OPAC). When Treadwell left Emory in mid-2002, the OPAC's functions were handled by a pair of interim co-coordinators, Charles Forrest and Betsey Patterson. The interim period stretched into approximately three years. The Market Councils developed further under the interim co-coordinators, working with their user communities in a variety of ways focused on public relations (events and exhibits) and publicity (including regularly published library newsletters from the Science, Social Sciences and Humanities Councils, and an annual *Student Library Guide* produced by the Undergraduate Market Council). The interim OPAC undertook some assessment initiatives, including management of Emory's participation in LibQUAL+®.

LibQUAL+® and Other Surveys

Emory's libraries participated among the forty-five research libraries in the first general administration of the LibQUAL+® survey in 2001. Results from the survey were discussed in the General Libraries and used as a data source for input into decisions about library services. The libraries continued to participate in the LibQUAL+® survey, conducting it again in 2002, 2003, and 2005.

In the period since the 2001 reorganization, the library has conducted numerous additional surveys to gather information about services and user needs. Specific examples where feedback has played a role in informing decisions include the Level 1 survey, where feedback informed decision-making on copy services and Candler Library space, and LibQUAL+® where results underscored the desire for quiet study space, more reliable photocopiers, and a library coffee shop.

The OPA, the AIG, and the LAC

Constantly evolving budgetary priorities resulted in OPAC's interim period extending beyond its original estimate. Then, in 2004, the advent of the University's strategic planning process and the library's participation in the initial round of planning focused attention on the need to emphasize data and assessment in the service of supporting library planning and evaluation. After an unsuccessful attempt to fill the position of Coordinator, Program Assessment and Process Improvement in the Library's Human Resources Office, the position of Library Assessment Coordinator was created, recruited for, and filled in September 2005. As originally advertised, the position was described as collaborating widely across the library and residing in the Office of Human Resources. As Hiller indicates, "having someone responsible is important, as an assessment programme cannot be run by just a group or added on to someone's already full plate of activities."² The library had now acknowledged and taken the opportunity to demonstrate a commitment to building its assessment program.

Office of Planning and Assessment

By the time the position was filled the reporting line changed to reflect the need to link the position more closely to data gathering and reporting, and to the library and campus strategic planning process. The library established a new Office of Planning and Assessment (OPA), combining library

strategic planning, facilities planning and project management, and assessment and evaluation, with reporting for the new Library Assessment Coordinator in that office. OPA is committed to creating an organizational culture of assessment and a sustainable program of assessment and evaluation in the Main Library, aligned with the organization's strategic plan and ongoing physical facilities management and development. "The more you know about your subject and your data, the better you can analyse and interpret results. Indeed, that is a good reason to develop or have expertise in-house rather than rely primarily on external consultants."³

The Market Councils have continued to evolve in ways that serve their markets, and share information under the umbrella of OPA through the Market Council Coordinating Group. But when the Library Assessment Coordinator became part of the new Office of Planning and Assessment (OPA) in September 2005, there was a felt need to formalize additional organizational support for assessment, to ensure that assessment activities were in alignment with the areas where it was most needed. While assessment was tied to OPA, it also had significant relationships with Human Resources. The new Coordinator also saw linkages to some of the issues and findings contained in a recently completed Organizational Assessment Task Force report, an internal study requested by the Vice Provost and Director of Libraries as a five year review of the organizational redesign implemented in 2001.

The new Coordinator also saw a need to involve library staff in a more formalized way to build support for assessment throughout the library. To address these needs, the Coordinator recommended creation of two groups to work with her to create a more sustainable program. The Library Assessment Council (LAC) is comprised of members of the senior administrative staff: the Director, Office of Finance and Budget; the Director, Office of Planning and Assessment; the Human Resources Officer; and the Library Assessment Coordinator. The Assessment Integration Group (AIG) is made up of staff members from across the organization who are committed to the principles and practice of assessment, working as a virtual team to represent the interests and needs of library staff, serving as a resource to other staff on assessment, and connecting the assessment program to library units and teams. The Assessment Coordinator convenes both groups.

The Assessment Integration Group

AIG meets approximately every other week. During 2006, the AIG focused on developing a common understanding of assessment in the various units of the library; worked with the data and contributed to the document the Coordinator presented to the library's senior leadership group on LibQUAL+®; developed an Assessment Activities web form that fed creation of an Activities Database; and participated in several all-staff presentations, including a June Information Forum on Assessment Activities Update, and a July Assessment 101 session.

Information Forums are ongoing sessions to which all library staff are invited, designed to showcase library initiatives and inform staff about current projects and programs. The Information Forum session in June 2006, presented by three AIG members, highlighted the activities of the year, provided additional context about LibQUAL+®, and introduced the Assessment Activity Form.

The commitment and enthusiasm of the AIG volunteers proved rewarding and invaluable. AIG members worked on the activity form through testing and revision until it was ready for staff use. Staff can submit information describing their assessment activities through an online iteration of the form at Formdesk. Members of AIG seeded the database initially with some activities in which they were already involved, thus providing examples for others to view.

While this was helpful, there continue to be issues involved in compliance and reporting. Even with the work done to date, and no matter the efforts made to state clearly what is meant by assessment activities, some staff members still ask if the survey they are conducting relating to the effectiveness or efficiency of a service is an assessment activity!

The Library Assessment Council

The Library Assessment Council (LAC), also meeting approximately every other week, has played a role in doing preparatory work to take to the Executive Strategy Group (ESG, the library's senior staff group) relating to the strategic plan and development of a Balanced Scorecard for library metrics. The LAC also played a preparatory role associated with the initial visit of the Association of Research Libraries (ARL) Visiting Program Officers for the Making Library Assessment Work Project in December 2005.

One initiative for 2006 involved working to

develop relationships with several important campus offices. The LAC met with staff from the Office of Institutional Research (OIR) to learn more about the services they could provide, such as assistance with survey development and Web survey deployment. OIR also shared information that resulted in a greater understanding about the need to coordinate large scale surveys with them to avoid over-sampling of the Emory community. When AIG conducted an "Assessment 101" session, to which all staff were invited, the OIR Director came and presented information about surveys. All in all, this relationship has developed well and holds promise for ongoing cooperation and new initiatives.

The Assessment 101 session was presented by several members of AIG, along with an introduction by the Director of the Office of Planning and Assessment and a segment on surveys from OIR. Content of the session included: Context for assessment at Emory (OPA director); Methods (surveys, focus groups, etc.); Introduction to the Assessment form; Relationship to the Office of Institutional Research (presentation from OIR Director); Relationship to the Institutional Review Board; and Data Management Considerations in the Use of SurveyMonkey.com.

Efforts to build a relationship with Emory's Institutional Review Board (IRB) developed in part because of a problem that surfaced involving a survey conducted by non-library staff in the library. IRB staff were invited to provide an overview of requirements and expectations to appropriate library staff and managers. The IRB Director and a Research Associate provided good information and encouraged library staff to contact them with questions or comments. Based on the information heard there, the library's leadership group approved a policy saying proposals for surveys, focus groups, and other library research that involves human subjects will be sent to the Office of Planning and Assessment for review and approval and for submission to the IRB. The goal was to enable central coordination of processes and ensure compliance with university policies and procedures. The Emory IRB has been in transition, and efforts to add additional staff and improve the situation surrounding the SHB (Social, Humanist, and Behavioral) Committee of the IRB have been underway.

Perhaps because of these transition and growth problems, as of this writing, the relationship with IRB has been less successful than that with OIR.

Efforts to get answers to questions or facilitate the review process for a few test studies that have been submitted have resulted in lengthy delays in receiving responses and feedback. IRB's recommendation of allowing at least a month to get study approval was clearly not enough time. Still, it has been a learning process and there is reason to hope that this situation and relationship will improve and become more workable for library studies that need IRB approval.

One advantage of having both the LAC and the AIG is that information is shared among more than one or two people and has a greater likelihood of being integrated into the organizational culture. Finding ways to infuse the organization with new information about assessment is quite challenging. E-mail has become almost invisible because there is so much of it. All-staff meetings are useful periodically, but many people who could benefit from the meeting do not attend. Thus, having a core group of individuals who share in the knowledge of assessment activities has been invaluable.

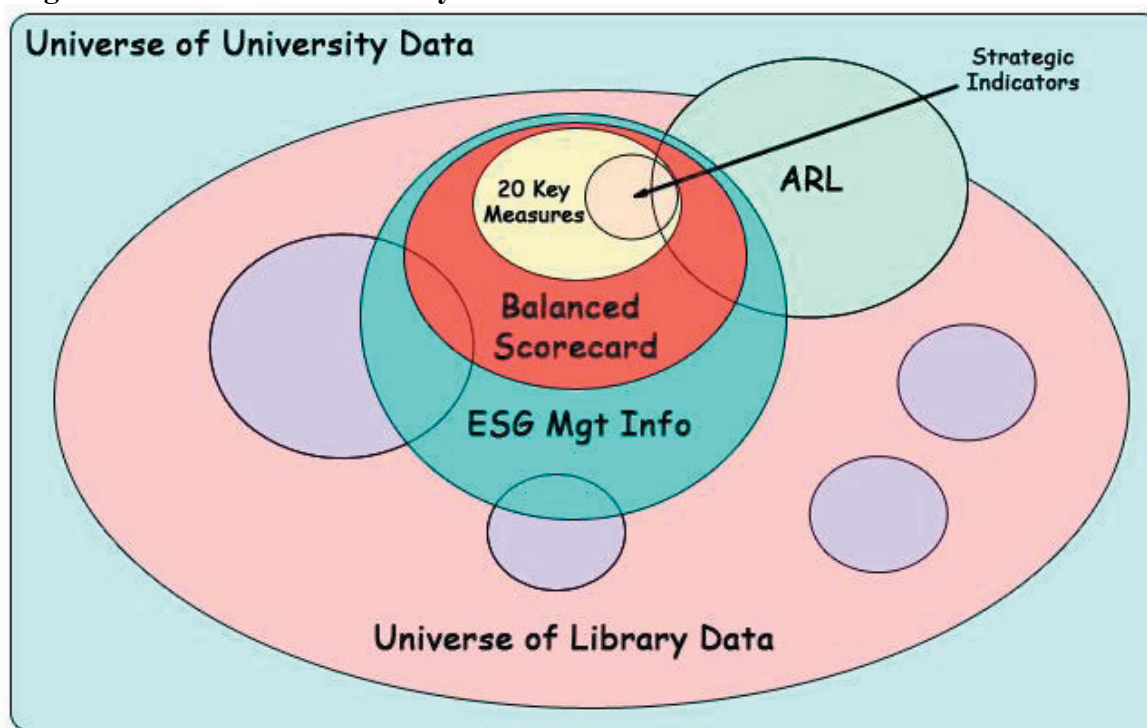
Putting It All Together: The Balanced Scorecard

The library's strategic planning process has been underway in response to and in an effort to align with the process at the university level for nearly two years. The university engaged in an inclusive process to develop a new university vision, and provided documents to schools and other units relating to development of goals, measures and targets, strategic initiatives, and tactics. Most of this work in the library has been undertaken at the level of the senior leadership group, the Executive Strategy Group (ESG). A key planning challenge for ESG has been establishing priorities among the many important and valuable initiatives it identified in the course of developing the library's strategic plan. During the process of attempting to meet the campus's requirement of no more than twenty key measures of library performance for the annual report, the group "refined" the original list of measures from approximately forty to sixty! Things were not exactly going in the right direction.

The Library Assessment Council was charged with developing a process by which ESG could engage the development of measures that would get closer to the required twenty. In part because of familiarity with the Balanced Scorecard and the University of Virginia library's adoption of that approach to establishing meaningful metrics, the LAC decided to introduce a Balanced Scorecard approach as a tool to help refine and focus measures and targets and improve the process in ESG. LAC proposed developing a draft Balanced Scorecard for ESG to respond and react to as an effort to build agreement on meaningful and actionable metrics. LAC members met with staff from the Emory Healthcare Strategic Planning Office, an office that has been using the Balanced Scorecard in its planning for several years. This enabled LAC to see and hear about an existing, working scorecard, as they thought through how this tool might help the library better focus its tracking and evaluation program.

Perhaps the most important outcome of using the Balanced Scorecard to date has been that the concepts have enabled more targeted and focused discussions. If the metric is something ESG views as a key measure, ESG members themselves have begun to ask: "Can a meaningful target be established, and are there actions we can take that will have an impact on the attainment of the target?" ESG has continued to refine the library's Balanced Scorecard; with a new library director and potential consolidation of vision and goals, the scorecard will continue to change. But it was a case of serendipity that the Balanced Scorecard is not only the tool used at the university level, but appears also to be the tool of choice for moving forward with planning under the new director's leadership. With the parallel processes underway at various levels in the library and the university, it appears that the library's process is aligning well with that of the campus.

The Universe of University Data is vast, and the Library is an important constellation in that Universe, with its own planetary nebulae and globular clusters (see Figure 1).

Figure 1: Universe of University Data

A Year of Assessment in the General Libraries: A SWOT Analysis

In developing an annual report on assessment in the library this year, it seemed appropriate to look for the strengths, weaknesses, opportunities, and threats relating to the Emory Libraries' assessment program. Having a full-time position approved and filled for assessment represents a strength, but the OPA is a relatively new office and is still creating its identity. Additionally, assessment is still more "real" for some staff than for others. Much of the library's data gathering over the years has not been standardized, so looking for trends in the information is something to approach with caution. In the strategic planning process, work is still underway on metrics and targets, and there will be a need for much more data collection and coordination in the future. With the coming of Rick Luce, the new Vice Provost and Director of Libraries, who is oriented toward planning, evaluation and the use of data in decision making, continued support for assessment is likely and needs for new and more useful data are likely. An additional challenge is that the Library Assessment Coordinator continues to have a great deal to learn!

For the Coordinator, one of the high points of the year has been the relationship with the ARL

Visiting Program Officers (VPOs) and the Making Library Assessment Work Project (MLAW). The arrival of the VPOs in December required data collection and compilation about current practices, including the statistics collected and why. Staff continue to use and build on some of the documents that were generated during their visit, as well as benefiting from the analysis in the report they provided after their visit. The VPOs have also served as resources during the year and provided insights and ideas based on their experience. Their arrival at just about the time the OPA was formed and the Coordinator position was filled was a happy example of good timing. It is difficult to imagine how we could have made the progress that we did without the jump-start that they provided.

Conclusion

The first year of the assessment program was sometimes exhilarating, sometimes frustrating, but never dull. A number of things worked as well or better than imagined and there were a number of positive accomplishments. Both the Library Assessment Council and the Assessment Integration Group became sources of support and made significant contributions to the program.

On the plus side, the adoption of the Balanced

Scorecard as a tool for use in the strategic planning process, dovetailing nicely with library assessment, proved its value in conversations about meaningful measures and targets. Discussions about measures, outcomes, and comparability of statistics over time have been taking place in various units and at various levels of the library, not just in ESG. Digital collections and services represent an area of strategic emphasis for the Emory libraries, and there is general recognition of the difficulty in accurately assessing the use of these collections. While there is not yet widespread understanding and compliance with the reporting requested for surveys and other assessment activities, staff members are increasingly checking with the Coordinator at an early stage when thinking about a survey or interview.

On the other hand, demonstrating value through highly visible, early successes and accomplishments was much more difficult than we had hoped. One project that saw sporadic effort but was not brought to fruition was that of a database of library statistical information. At the most basic level, it was difficult to achieve clarity about what should be included as the core set of data and how to build out from there.

The first year of the Office of Planning and Assessment and of the newly reinvigorated assessment program, have been the most recent phase of the library's unfolding process of "lurching toward sustainability." At times it seems that there are fewer solid accomplishments to report than anyone would want at this stage. But at the same time, overcoming initial inertia, and getting something off the starting line and up to

any speed, is not an inconsequential task. Perhaps there is some comfort in Hiller's observation "expectations may be unrealistic, since effective assessment cannot be done overnight but requires time, effort, organizational commitment and resources."⁴ As momentum builds on the campus and in the library for alignment of strategic and annual planning processes, compiling and reporting meaningful metrics, and demonstrating the library's value-added and accountability for results, the Office of Planning and Assessment and the Library Assessment Coordinator are well positioned to provide support and leadership in the new administrative environment.

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Endnotes

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Practical Assessment at Texas A&M Libraries: Using LibQUAL+® Comments to Enhance Reference Services

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Abstract

In the summer of 2005, Reference Services in the Evans Library at Texas A&M University underwent a significant reorganization. The goal was to integrate the formerly separate Humanities/Social Sciences Reference Unit and Sciences/Engineering Reference Unit under a single service philosophy. Additionally, the library drastically changed to a model of offering Reference Services in a tiered environment in which tenured or tenure-track librarians have no scheduled reference desk hours at any time but are responsible for on-call responsibilities and a chat-based reference service known locally as AsKnow. A new Head of Reference Services was hired with a mandate to continue the tradition of high-quality and proactive service for all patrons. The first priority under the new model of offering service was to examine the readily-available feedback in an effort to understand perceptions of reference service quality and initiate immediate changes when and where feasible. As Texas A&M University has been an active leader in LibQUAL+® since its inception, it was decided that our survey data would be the best place to begin. Although the Associate Dean for Advanced Studies (primarily public services) had gathered a group of librarians to begin analyzing the composite LibQUAL+® data from recent years, the Reference Unit thought it would be advantageous for a smaller, internal working group to look at the survey comments as they pertain to reference services.

Introduction

The Texas A&M University (TAMU) Libraries has a rich history of library assessment. It is one of the two landmark public institutions in the state of Texas, and, at 45,000 students, it is the fifth or sixth largest university in the country. Its library system is highly centralized, there is a current focus on collection building in all formats, and the entire library faculty is tenured or tenure-track.

Environment

My own history in assessment and improvement at TAMU Libraries is far less extensive than that of Dr. Cook or Dr. Heath, as I've only been at TAMU for about ten months. I was hired just ten months ago as Head of Reference Services after an extensive re-conceptualization of the way TAMU Libraries offer those services. Most significantly, two separate service points (one for science and engineering and one for humanities/social sciences) were integrated into one large unit. (In fact, this combined Reference Services unit may have the largest constituency base of any academic library in the US, providing reference services for 40,000 students and their faculty from one desk!) Additionally, a largely successful virtual reference (VR) service went "live" seventy hours-per-week about the same time. It was in this climate that a serious departmental assessment took place.

One of my first priorities was to examine the readily-available feedback in an effort to understand perceptions of reference service quality and initiate changes when and where feasible. Since Texas A&M University has been an active leader in LibQUAL+® since its inception, we decided that our survey data would be the best place to begin. Although the Associate Dean's office had begun to analyze the composite LibQUAL+® data from recent years, the Reference Unit thought it would be advantageous for a smaller, internal working group to look at the survey comments as they pertain to reference services.

Methodology

A group of volunteers from Reference Services, led by a newly-hired Undergraduate Specialist Librarian, was charged with reviewing all comments in the 2003-2006 LibQUAL+® surveys, spot trends which may affect the perception of reference services, refer other systemic issues to the Head of Reference, and to recommend changes to reference organization and operations based on the

comments. The charge continued that the recommendations should be low-cost (in time and talents output as well as financial encumbrance) but with high visibility. Reference Services had no preconceived notions as to their ability to correct systemic or complex problems related to systems, personnel, or other areas outside the reference unit. Specifically, low-hanging fruit require quick fixes. We agreed, however, to analyze the comments and refer any significant issues outside our purview to the appropriate Associate Dean for her review.

With this charge in hand, and given extreme flexibility to organize as they saw fit, the team members began their work. All told, the comments and recommendations were hardly a surprise for anyone in Reference Services. As is often the case, certain issues are well understood and solutions can be close at hand. What is often lacking is simply the organizational (or managerial) impetus to institute fixes. One caveat that we understood in reviewing the recommendations: since the data we were using was captured over four years, many of the comments pertained to previous organizational challenges now solved by the integration of the two reference departments.

Report and Recommendations

The team organized the comments by large themes:

- Category 1: Need to improve referral procedures, knowledge of departmental procedures, and cross-training
- Category 2: Need to be more proactive and accessible
- Category 3: Need to improve approachability of Reference Services
- Category 4: Need continuing education on reference interview skills
- Category 5: Need to improve reference knowledge overall, particularly by having a benchmark for basic knowledge
- Category 6: Need to improve access to and knowledge of subject specialists
- Category 7: Need to improve signage and awareness of reference services
- Category 8: Need to improve attitudes or the effects of "bad days"
- Category 9: Need to provide language assistance when necessary
- Category 10: Need to clarify TAMU Galveston access to resources

In their report, each category was followed by

relevant comments, recommendations for change, and goals of each recommendation. Although team members saw focused categories, I saw broad themes emerge that have helped direct my approach to managing reference services.

Recommendations, in several places, stray from easy-to-implement changes. Some of what was brought forward is systemic and requires organizational change and possibly new or reallocated resources. Instead of sending the report back and asking for recommendations more in line with the original charge, I decided to accept the recommendations since I needed to understand as much about the underlying issues as I did about easy-to-implement fixes.

What follows are a few of our easy-to-fix recommendations and how we used them to change the way we offer services.

Operationalizing the Recommendations

Category 9: Need to improve language assistance at the reference desk

This was the easiest recommendation to implement. TAMU Libraries' Language List specifies fluencies of librarians and staff. Like many libraries, we have a large number of fluent foreign language speakers, including several different Asian and East European languages, who have agreed to serve as translators. Acting upon the recommendations, we: updated the existing list with new names and fluencies posted the list on our Web site, Intranet, and in print at various service desks; reminded those who meet the public face-to-face about the list in an e-mail; and I asked our Administrative Assistant to do this occasionally.

We will also send an updated copy to our International programs office so they can refer their customers requiring translation services to appropriate library staff. We have recently assigned the role of International Specialist to a current librarian and he has begun working directly with those constituencies and created language-specific materials for them. (This was a parallel development, and not directly related to our reference assessment program.) The librarian in that role, however, did serve on our LibQUAL+® assessment team.

This is a terrific example of using feedback to fill identifiable high value gaps without causing organizational upheaval or significant planning. Most of the work for this was done by the Administrative Assistant for Reference.

Category 5: Need to improve reference knowledge overall, particularly by having a benchmark for basic knowledge

Example Comments:

"Subject assistant staff should be able to do better than just search Google."

"The library staff tries hard and is appreciated. They are limited primarily by the resources provided."

"Performance of reference desk staff is the one thing that I have found spotty. Sometimes the person I get help from seems to really know what they're doing, other times not."

"The library staff are usually good, but the quality and helpfulness of student workers varies a lot. It seems that too many undergraduates do not know about how to use electronic resources!"

"Student reference workers are often not well enough trained for my undergraduate students' questions."

"Reference desk employees are sometimes misinformed or give out bad information."

"Some library staff have knowledge ONLY about the area they are working in. They are not able to point out the area where I can access specialized information like scientific journals."

"Also, people who work in the library could be more effective if they had more specific knowledge of various fields of study. Sometimes a research problem is hard to describe to someone unfamiliar with the area of study."

Recommendations:

- Define and require a benchmark of expertise at desk—what is the basic level of knowledge everyone should maintain?
- Have all staff and librarians provide feedback of what should be benchmark of knowledge
- Train all service desks about the basics of reference interview skills
- Eliminate practice of staffing reference desk with student workers / Do not rely so heavily on student workers help at reference desk (or provide more intense training, see Additional Recommendations section below)
- Implement a new scheduling practice in which

we always have at least one science/engineering and one humanities/social sciences expert either at desk, on-call, or on Virtual Reference at any given time in order to provide a contact if a subject librarian isn't available

- Benchmark of knowledge should provide training so that use of Google for research is a last resort
- Training/sharing sessions to help reference employees "Think Outside the Box"; learn to think beyond reference resources if you feel limited

Goals of the Recommendations:

- Improve level of reference expertise
- Improve consistency of reference help
- Improve equality of service to all patrons
- Improve first reference encounter for patrons (before referred to a subject specialist/service desk)

Here, the recommendations do not lend themselves a quick fix. In fact, the recommendations are a mandate for all of reference services, but especially for me, as Head of Reference. It was important for me to understand that there was a significant gap in perception between the job we THOUGHT we were doing and the job we were PERCEIVED to do. It is impossible to know, without further longitudinal data, if the issues in this recommendation were solved, at least partially, by the integration of two former reference desks.

However, this recommendation had several discrete issues that led to several changes we were able to bring about quickly. Specifically, the way student workers were being used and what they were being used for was ambiguous at best. With the merger of the two units, the students were merged as well and the student supervisor for the former humanities/social science unit became supervisor of the combined student staff. I asked the staff members who had previous student supervisory responsibility and others who currently have the most to do with students to create a set of expectations for student training, and, specifically, what a student's role should be on the reference desk. I personally believe that students can be a valuable asset for a reference desk and mandated that students WILL be scheduled for reference desk duty, at a limited level, and left that level up to the team to decide. I went further, as was my purview as department head, and specified

that students working on the desk would wear nametags, but they could not wear hats, T-shirts (unless Aggie shirts), or ear buds in their ears while reshelving in the reference collection. The team recommended, and I approved, that we would significantly change our expectations, and by extension, the way we train our student employees. They agreed that the students should have a limited role at the desk, and serve primarily as the hands of the reference desk, escorting students to the stacks, assisting with PC/printer/copier questions and the like. At the same time, we believe that they should be able to successfully use and instruct on our OPAC as well as explain the initial search function of our federated search page. In the recent years before I came, the task of training our students fell to our Training department. I took this task back because it is my opinion that if reference librarians and staff are the experts at training the university community, we should be able to train our own student workers. This new conceptualization of our student labor has gone into effect this semester and we will assess the new model during and after the academic year.

Conclusion

The larger issues—expertise of staff and librarians—this last recommendation brought forth are part of my overall mandate for improving the quality of reference services, both in person and virtually. In the last several months, we have introduced an internal-driven, librarian-taught training program for different subjects and specialties. This is especially important as staff and librarians now have to act and react in a combined reference department. From the comments and analysis, we have learned that we need a better understanding of what patrons using reference services experience. I, the Associate Dean of Public Services, and our staff member overseeing our internal SACS accreditation process recently discussed how to make the “reference interview” part of our Quality Enhancement Plan. We intend to use other qualitative means such as focus groups, after VR session surveys and mystery shoppers, to further understand the patron-side of the reference process.

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Getting Our Priorities in Order: Are Our Service Values in Line with the Communities We Serve?

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Abstract

LibQUAL+® is used by academic libraries from more than 500 institutions, including colleges, universities, and community colleges, as a method of measuring users' perceptions of service quality. The instrument allows users to rate their minimum, perceived, and desired levels of service for twenty-two items in three dimensions: information control, library as place, and service affect. Using the results from the 2005 survey at the University of Texas at Austin, we examine how well the service priorities of library staff are aligned with the priorities of undergraduates, graduate students, and faculty.

To define the priorities for a given individual, we re-scaled the "desired" score for each item to reflect the degree to which the item is above or below the average desired level for that individual. The rescaled scores (termed "priority" scores) for the twenty-two items were then compared between the four groups using a multivariate analysis of variance (MANOVA). Preliminary results indicate that service priorities for library staff align more closely with those of undergraduates than with those of graduate students and faculty.

This analysis is a first step in identifying service priority gaps between library staff and the users they serve. Our intention is to promote discussion among library staff about users' needs and how closely staff service priorities align with those needs. In addition, our findings may prove useful as management information by allowing us to analyze our users' service priorities and integrate the results of this analysis into organizational decision-making and planning processes.

Introduction

Academic libraries provide content and services core to the research, teaching, and learning missions of their parent colleges and universities. These libraries provide fodder for faculty and student research, as well as valuable work space for the advancement and transmission of knowledge. As users' information seeking behaviors and

service preferences have evolved over time, academic libraries and their staffs have adjusted service and content delivery methods. A recent study by the Online Computer Library Center (OCLC), however, suggests that a dissonance exists between the services and content provided by libraries and those desired and most frequently used by users seeking information.¹ In a follow-up survey conducted to discover how libraries fit into the lives of information seekers, OCLC found "trends toward increased information self-service and seamlessness"² via increased reliance on online information resources on the part of respondents, and more glaringly, that libraries' share of this unmediated information service environment was well behind that of non-library competitors.

College students reported a similar though less exaggerated orientation to their information seeking behaviors, giving higher favorability ratings to the information available in search engines than to either libraries' physical or online offerings. When asked about their actual usage of electronic information resources, college students reported substantially higher usage of search engines than library Web sites; and when asked how they learn about electronic information resources, asking a friend (67%) and following links from a found Web site (61%) easily outpaced asking a librarian (33%) or consulting a library Web site (36%).³ Facing an identifiable gap between the services and content offered and what at least one group of users are choosing to use to find information, academic libraries might ask if their organizational service priorities, and specifically the priorities of library staff, are adequately aligned with those of their users.

Much has been written about the provision of customer service in libraries,⁴ about libraries remaining relevant to users,⁵ about measuring user perceptions of service quality,⁶ and the opinions of librarians regarding the best methods for responding to changes in user behavior.⁷ But studies addressing the relative service priorities of

library users and library staff are fewer; these⁸ are summarized below.

Edwards and Browne conducted a study investigating if librarians and faculty differ in how they view the quality of information services.⁹ Three hundred faculty members and fifty-five librarians at four universities in Australia were surveyed regarding indicators of quality; findings showed that while librarians in the sample reported a relatively accurate perception of overall user expectations, they underestimated faculty expectations "about computer-based services, responsiveness in obtaining material, timeliness of service, and the arrangement of materials."¹⁰ Librarians overestimated faculty expectations pertaining to the importance of faculty/librarian relationships and user education programming.

The New Zealand University Libraries Effectiveness Study (NZULES) addressed the question of whether there are different perceptions of effectiveness among the various stakeholders of seven university libraries in New Zealand.¹¹ Stakeholders were identified as university administrators, senior library staff, other library staff, academic staff, graduate students, and undergraduates. Survey responses were ranked and compared across stakeholder groups. Responses for senior and other library staff had the highest correlation. Responses for senior library staff and other library staff had more moderate correlations with academic staff, graduate students, and undergraduates. Library staff in general placed service and management issues at or near the top of the list, while academic staff rated issues "relating to expert assistance most highly, and [had] a major concern about intellectual access."¹² Graduate students focused on library access and access to materials, while undergraduates' concerns centered on the study environment, access to information, and equipment.

A study conducted at Glasgow Caledonian University and inspired by NZULES¹³ set out to create a set of user-centered performance measures to be used in British academic libraries to improve customer service. Results indicated that each stakeholder group had its own service preferences, but when viewing the ranking of all stakeholders "... it is noticeable that some issues which are traditionally regarded as important by librarians were rated lowly" by other stakeholders.¹⁴ "Staff consistently felt that the capabilities and qualifications of library staff were very important; however, small proportions of stakeholders agreed

that the expertise of service desk staff (19%), the proportion of staff with professional credentials (13%), and the level of staff training and development (24%) were "very important."

Taken together, the results of these studies suggest that academic library staff tend to place very high importance on the quality of mediated service interactions, while users may be placing a higher priority on easy access to quality content. Identifying such misalignments can provide useful direction for creating and maintaining service profiles that more closely map to users' stated needs, and thus lead to better support for the research, teaching, and learning missions of parent institutions. Discovering such misalignments in service priorities between library staff and their users can also provide important management information useful for staff development and resource allocation purposes. The current study opens an investigation of potential misalignments between academic library staff and their three primary user groups (faculty, graduate students, and undergraduates), using a sample from the University of Texas at Austin 2005 LibQUAL+® data.

Methods

Sample

This paper is based on the results from the LibQUAL+® survey completed at the University of Texas at Austin in 2005. The survey covered fifteen libraries and four research centers on campus, with 847 useable surveys submitted: 319 from undergraduates, 287 from graduate students, 192 from faculty, and forty-nine from library staff.

Measures

LibQUAL+® is a set of services constructed in response to the Association of Research Libraries (ARL) New Measures Initiative. It is an assessment tool for collecting and analyzing customer perceptions of service quality in three areas: Affect of Service (questions in this category relate to the attitudes and abilities of employees when assisting others), Library as Place (questions in this category relate to the library facilities and use of space), and Information Control (questions in this category focus on collection breadth and scope, the ability of respondents to find information on their own, and the Libraries success in providing information).¹⁵

The survey consists of twenty-two service statements and a comment box. Respondents are asked to rate each service indicator on three levels

(the minimum level of quality that is acceptable, the desired level of quality, and the current perceived level of service quality) using a Likert scale of 1-9. (See Appendix A for sample survey.)

Preliminary Analysis

The minimum, perceived, and desired ratings may be used to calculate two kinds of gap scores. The *adequacy gap* is the difference between a person's minimum level of acceptable service and their perceived rating; the *superiority gap* is the difference between a person's perceived rating and their desired level of service. A preliminary step in our analysis was to examine the adequacy gap values separately for each of the four user groups using a "gap analysis chart" method developed by the Clemson University Libraries (see Appendix B for a sample gap chart). If an adequacy gap is greater than 1.0, the service is perceived at a level above the minimum and is colored green on the chart. If the adequacy gap value is negative, the perceived level of service has fallen below the minimum acceptable level; those areas are colored red. Services with an adequacy gap below one, and with values that have declined over two or more years, are colored yellow, indicating areas of potential danger. In addition to examining the adequacy gaps, we also ranked each item according to its "desired mean," or average level of desired quality, within each user group. For example, in 2005 faculty reported a desired mean score of 8.67 for "Print and/or electronic journal collections I require for my work," a desired mean of 8.62 for "Making electronic resources accessible from my home or office," and 8.37 for "A library Web site enabling me to locate information on my own." These three items had the highest desired means for faculty in 2005; accordingly, their respective desired mean rankings are 1, 2, and 3.¹⁶

The difference in the desired mean rankings between the user groups in 2005 caught our attention. For faculty and graduate students, eight out of the top ten ranked items were in the Information Control area. For undergraduates, half fell into Information Control, while the others were scattered through other areas. For library staff, however, the majority of the top ten items fell into Affect of Service. This apparent divergence between how library staff and user groups rank the relative importance of the survey items, and thus the services represented by those items, led us to question whether these apparent differences in

priorities were statistically significant.

In order to perform statistical analysis on the data, it was necessary to define the service priorities of each individual respondent. To do so, we re-scaled each respondent's desired score for each item to reflect the degree to which the item was above or below the average desired level across all items for that respondent.

As an illustration, suppose that Betty, a member of the library staff, has very high expectations for every item on the survey; her average desired score across all twenty-two items is 8.8. However, Betty rates some items as more important than others. For example, her desired score for the Library as Place item "comfortable and inviting location" is only a 7, while her desired score for the Affect of Service item "employees who deal with users in a caring fashion" is a 9. Betty places a higher priority on caring for users than in creating an inviting atmosphere. When Betty's scores are re-scaled around her individual mean of 8.8, her new scores are -1.8 for inviting location, indicating that it is a below-average personal priority, and +0.2 for caring for users, indicating that it is an above-average personal priority.

By re-scaling scores around each respondent's personal average, we created a personal priority index (hereafter termed the "priority score") that eliminated individual differences in absolute standards and allowed comparisons of relative standards across items. These priority scores were subjected to the final statistical analysis, as discussed below.

Results

Across the sample, average priority scores for each item ranged from a low of -1.94 (for the Library as Place item "community space for group learning and group study") to a high of +0.74 (for the Information Control item "a library Web site enabling me to locate information on my own"). Table 1 shows the average scores for each item. In general, we refer to items with scores between +/- 0.10 as being an "average" priority, scores between +/- 0.50 as being a "moderately" high or low priority, and scores above +/- 0.50 as being a "very" high or low priority. Accordingly, group learning space is, on average across all groups, a very low priority, while a library Web site is a very high priority.

Table 1. Average priority scores for 22 items.

	Mean	Standard Deviation
<i>Information Control</i>		
The printed library materials I need for my work	- 0.01	2.41
The electronic information resources I need	+ 0.68	1.74
Modern equipment that lets me easily access the information I need	+ 0.55	1.66
Easy-to-use access tools that allow me to find things on my own	+ 0.54	1.70
Making information easily accessible for independent use	+ 0.50	1.69
Print and/or electronic journals I require for my work	+ 0.26	2.53
Making electronic resources accessible from my home or office	+ 0.80	1.84
A library Web site enabling me to locate information on my own	+ 0.77	1.60
<i>Affect of Service</i>		
Employees who instill confidence in users	- 0.57	2.18
Giving users individual attention	- 0.81	2.16
Employees who are consistently courteous	+ 0.39	1.62
Readiness to respond to users' questions	+ 0.05	1.90
Employees who have the knowledge to answer user questions	+ 0.24	1.83
Employees who deal with users in a caring fashion	- 0.16	1.94
Employees who understand the needs of their users	- 0.20	2.10
Willingness to help users	+ 0.01	1.84
Dependability in handling users' service problems	- 0.48	2.70
<i>Library as a Place</i>		
Library space that inspires study and learning	- 0.19	2.09
Quiet space for individual activities	- 0.30	2.30
A comfortable and inviting location	+ 0.05	1.88
A getaway for study, learning, or research	- 0.23	2.28
Community space for group learning and group study	- 1.87	3.22

The priority scores for the twenty-two items were compared between the user groups using a repeated-measures analysis of variance (MANOVA), with Item as a within-subjects factor with 22 levels, and Group as a between-subjects factor with four levels. Mauchly's test indicated that the sphericity assumption underlying repeated-measures ANOVA was violated for this sample. Accordingly, we report the Wilks' Lambda multivariate F -test, which does not require the sphericity assumption. Overall, there was a significant main effect of Item, $F(21, 823) = 19.37$, $p < .001$, indicating that the twenty-two items differed in their average priorities, as well as a significant Group by Item interaction, $F(63, 2457) = 6.23$, $p < .001$, indicating that the four user groups tended to differentially prioritize at least some items. As described above, priority scores were created by centering each item for a

particular individual on that individual's mean; accordingly, the mean for each individual across the twenty-two new priority scores was zero. Consequently, multivariate means for each group were also zero, rendering the multivariate main effect of Group irrelevant.

To determine which items contributed to the Group by Item interaction, we performed follow-up univariate tests of the effect of Group for each item. Significant univariate tests were followed by post-hoc pairwise comparisons to compare the library staff to each of the other three groups.

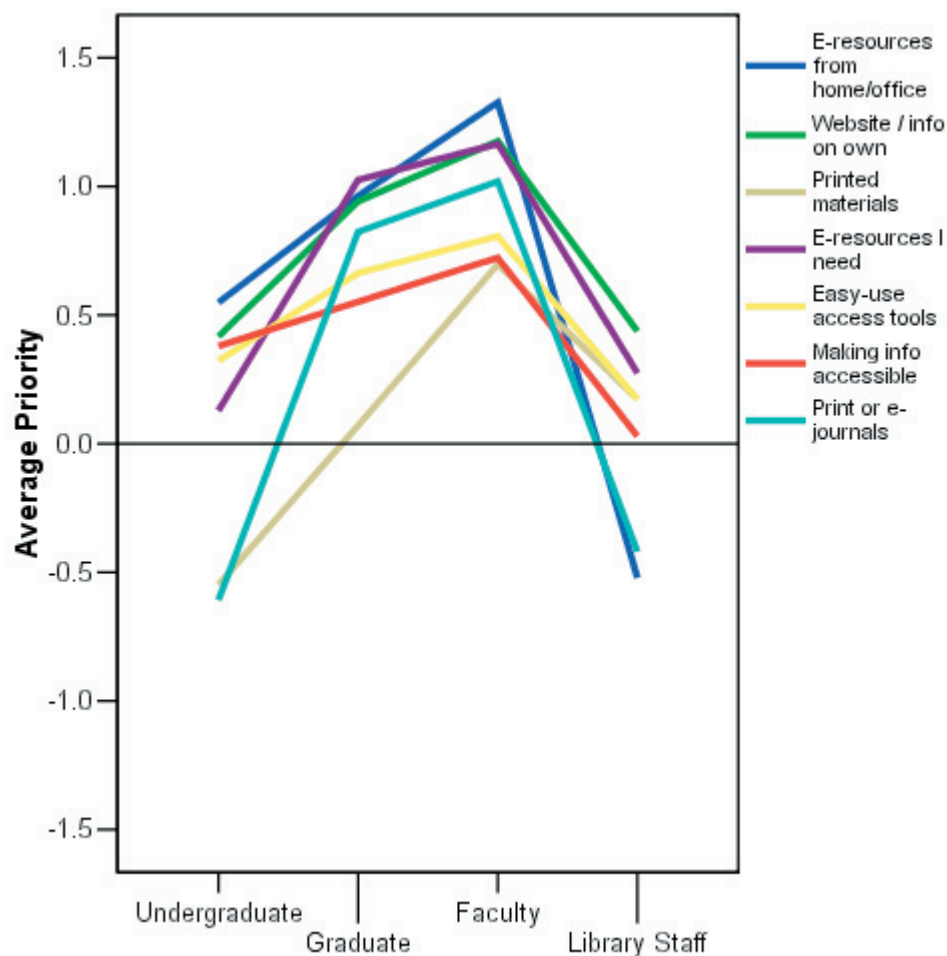
Information Control

Univariate tests for Information Control were significant for seven of the eight items. The single non-significant item was "modern equipment that lets me easily access the information I need." Differences between library staff and the other

groups for the seven items are shown in Figure 2. Overall, library staff tended to set a lower priority on Information Control items than did graduate students and faculty, while prioritizing the items similarly to undergraduates.

For “easy-to-use access tools that allow me to find things on my own,” $F(3, 843) = 4.64, p < .01$, staff (mean = 0.17) prioritized the item lower than faculty (mean = 0.81, $p < .05$), marginally lower than graduate students (mean = .66, $p = .06$), and similarly to undergraduates. For “making information easily accessible for independent use,” $F(3, 843) = 3.04, p < .05$, staff (mean = 0.03) prioritized the item significantly lower than both faculty (mean = 0.72, $p < .01$) and graduate students (mean = 0.55, $p < .05$), but similarly to undergraduates. For “making electronic resources accessible from my home or office,” $F(3, 843) = 17.27, p < .001$, staff (mean = -0.52) rated the item significantly lower than all three groups, faculty (mean = 1.33, $p < .001$), graduate students (mean = 0.96, $p < .001$), and undergraduates (mean = 0.55, $p < .001$). For “a library Web site enabling

me to locate information on my own,” $F(3, 843) = 11.52, p < .001$, staff (mean = .44) prioritized the item lower than faculty (mean = 1.18, $p < .01$) and graduate students (mean = 0.94, $p < .05$), but similarly to undergraduates. For “modern equipment that lets me easily access the information I need,” there were no differences, $F(3, 843) = 1.53, ns$. For “print and/or electronic journal collections I require for my work,” $F(3, 843) = 26.42, p < .001$, staff (mean = -0.42) prioritized the item lower than both faculty (mean = 1.02, $p < .001$) and graduate students (mean = 0.82, $p < .001$), but similarly to undergraduates. For “the printed library materials I need for my work,” $F(3, 843) = 11.46, p < .001$, staff (mean = 0.17) prioritized the item similarly to faculty and graduate students, but higher than undergraduate students (mean = -0.55, $p < .05$). For “the electronic information resources I need,” $F(3, 843) = 21.86, p < .001$, staff (mean = 0.28) prioritized the item similarly to undergraduates, but lower than both faculty (mean = 1.17, $p < .001$) and graduate students (mean = 1.03, $p < .01$).

Figure 2. Information Control priority scores for each group

Affect of Service

Across the nine Affect of Service items, five had significant univariate tests, and one was marginally significant. Where there were significant differences, library staff tended to prioritize these items more highly than the other groups. Non-significant items were "Employees who deal with users in a caring fashion," $F(3, 843) = 1.62, n.s.$, "willingness to help users," $F(3, 843) = 1.14, n.s.$, and dependability in handling users' service problems," $F(3, 843) = 1.66, n.s.$ For "readiness to respond to users' questions," $F(3, 843) = 2.48, p = .06$, the univariate test was only marginally significant, and there were no significant differences between library staff and the other three groups. Two other items had significant univariate tests, indicating differences in priorities between at least two of the four groups, but those differences were not between the library staff and the other three groups: "employees who understand the

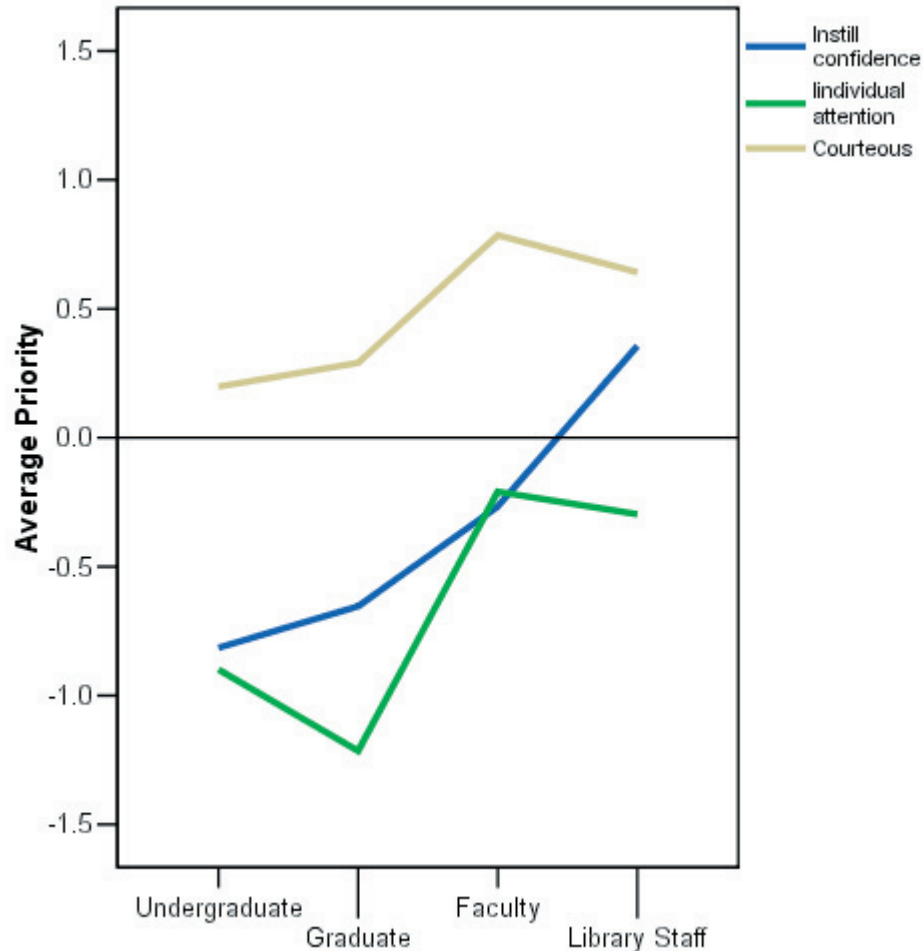
needs of their users," $F(3, 843) = 3.90, p < .01$, and "employees who have the knowledge to answer user questions," $F(3, 843) = 2.72, p < .05$.

Only three items had both significant univariate tests and significant pairwise comparisons between library staff and the other groups. Results for these items are shown in Figure 3. For "employees who instill confidence in users," $F(3, 843) = 5.78, p < .001$, staff (mean = 0.36) prioritized the item marginally higher than faculty (mean = -0.27, $p = .07$) and significantly higher than both graduate students (mean = -0.65, $p < .01$) and undergraduates (mean = -0.82, $p < .001$). For "giving users individual attention," $F(3, 843) = 9.72, p < .001$, staff (mean = -0.30) prioritized the item similarly to faculty, but more highly than graduate students (mean = -1.22, $p < .01$) and marginally higher than undergraduates (mean = -0.90, $p = .07$). For "employees who are consistently courteous," $F(3, 843) = 6.21, p < .001$, staff (mean = 0.64)

prioritized the item similarly to faculty and graduate students, but marginally higher than

undergraduates (mean = 0.20, $p = 0.07$).

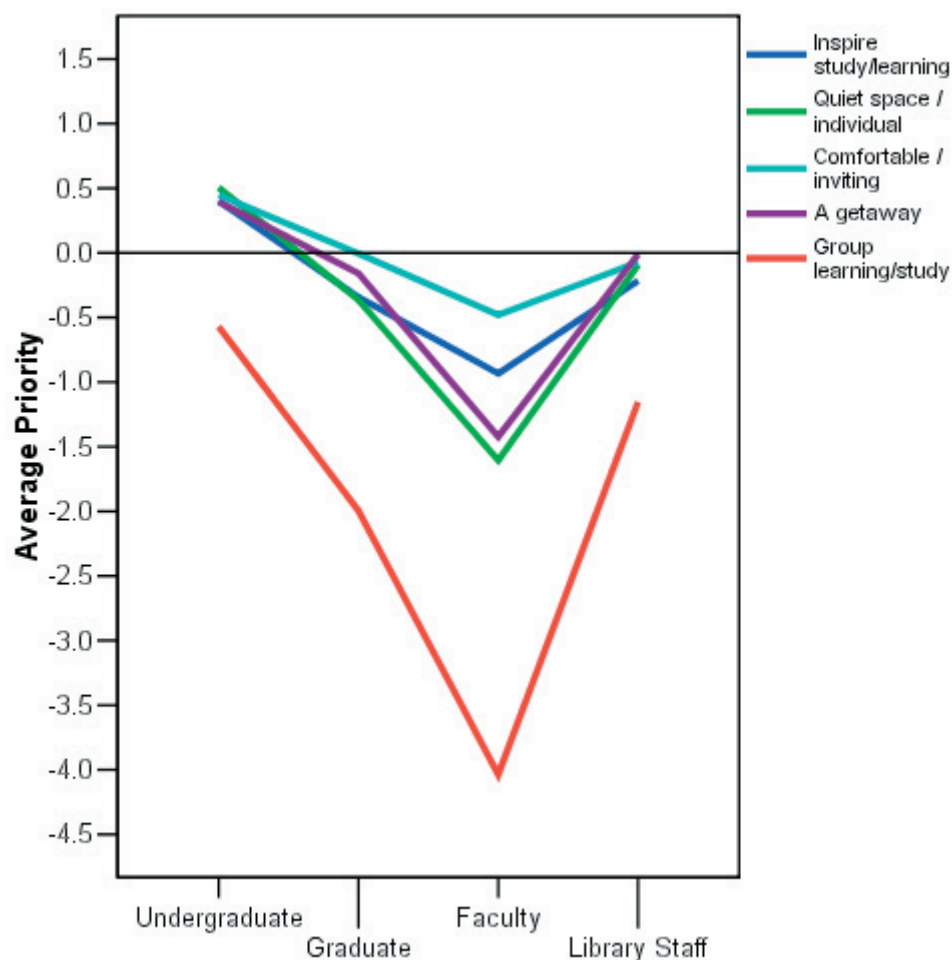
Figure 3. Affect of Service priority scores for each group



Library as Place

All five Library as Place items showed significant univariate tests of differences between groups, as shown in Figure 4. Overall, library staff tended to prioritize these items more highly than faculty, similarly to graduate students, and lower than undergraduate students. For “a getaway for study, learning, or research,” $F(3, 843) = 28.14$, $p < .001$, staff (mean = -0.01) prioritized the item higher than faculty (mean = -1.42, $p < .001$), but similarly to graduate students and undergraduates. For “library space that inspires study and learning,” $F(3, 843) = 18.18$, $p < .001$, staff (mean = -0.22) prioritized the item higher than faculty (mean = -0.93, $p < .05$), similarly to graduate students, and lower than undergraduates (mean = 0.51, $p < .05$). For “quiet space for

individual activities,” $F(3, 843) = 38.19$, $p < .001$, staff (mean = -0.09) rated the item higher than faculty (mean = -1.61, $p < .001$), similarly to graduate students, and marginally lower than undergraduates (mean = 0.51, $p = .07$). For “a comfortable and inviting location,” $F(3, 843) = 10.31$, $p < .001$, staff (mean = -0.07) prioritized the item similarly to faculty and graduate students, but marginally lower than undergraduates (mean = 0.45, $p = .07$). Finally, for “community space for group learning and group study,” $F(3, 843) = 56.55$, $p < .001$, staff (mean = -1.15) rated the item similarly to undergraduates, but higher than faculty (mean = -4.04, $p < .001$) and marginally higher than graduate students (mean = -2.00, $p = .07$).

Figure 4. Library as a Place priorities for each group

Discussion

The most substantive result of this analysis is that library staff set a lower priority on several Information Control items than do users. Specifically, staff prioritized the items "easy-to-use access tools that allow me to find things on my own," "a library Web site enabling me to locate information on my own," "making information easily accessible for independent use," and "the electronic information resources I need" lower than faculty and graduate students, and the item "making electronic resources accessible from my home or office" lower than all three user groups. This misalignment of service priorities is potentially problematic when viewed in conjunction with how these users report they use library and non-library resources when seeking information.

In 2005, 81% of the University of Texas at Austin faculty, graduate students, and undergraduates reported using Google, Yahoo, or other non-library

information gateways daily, versus only 16% for resources found in the physical library, and 32% for resources found via a library Web site.¹⁷ Users more often choose search engines over libraries or library Web sites to begin information searches, and they rate search engines higher than librarians on the quality and quantity of information found.¹⁸ In general, users clearly prioritize the ability to engage in self-directed information seeking on their own terms, utilizing easy-to-use online information resources. The misalignment between library staff and users in terms of the prioritization of Information Control is a cause for concern. If library staff do not set a high priority upon meeting users' evolving needs and desires in this area, academic libraries will find it increasingly difficult to remain relevant to users who will continue to pursue non-library alternatives.

Though library staff priorities tended to align more consistently with the other groups on Affect

of Service items, staff prioritized the item “employees who instill confidence in users” higher than all three groups, and “giving users individual attention” and “employees who are consistently courteous” similarly to faculty, but higher than graduate students and undergraduates. That library staff place a high priority on courteous, high quality service interactions is not surprising, and if anything should be seen as positive confirmation of their commitment to serving users well. But when viewed with the aforementioned misalignments on several Information Control items, these differences in Affect of Service priorities provide some confirmation that users are more concerned with unmediated access to quality, easy-to-use content and less on in-person, one-on-one interactions with library staff. Echoing Edwards and Browne,¹⁹ we see that users are more focused on getting the information they need and less worried about the attributes of the staff providing library services.

On Library as Place items, library staff tended to prioritize higher than faculty, similarly to graduate students, and lower than undergraduates. Staff prioritized all but one item, “a comfortable and inviting location,” higher than faculty. On four of five items, library staff prioritized similarly to graduates students, with the exception of “a community space for group learning and group study,” which staff prioritized marginally higher. Staff prioritized the items “library space that inspires study and learning” lower than undergraduates and “quiet space for individual activities” and “a comfortable and inviting location” marginally lower. These results clearly reflect the disparate ways in which our core user groups tend to utilize our physical facilities. Faculty members often view our facilities as warehouses for content—the fodder for furthering their research and teaching. Undergraduates often view our physical spaces as work space, and prioritize comfortable space that inspires learning. Graduate students tend to straddle both views—they value the content necessary for successful research, but also use the library as work space. Though library staff priorities are marginally misaligned on multiple Library as Place items, these results should serve as a reminder for both staff and library managers of just how differently our core user groups prioritize service when it comes to library facilities.

Referring to the 1993 NZULES study, Cullen states that “[l]ibrary staff again demonstrate their desire to be responsive to user needs . . . But their

aspirations and their perceptions of what users want are not close to reality.”²⁰ While our results do not indicate anything close to a break with reality between library staff and our core user groups, we do see indications of misalignment between the service priorities of staff and those of users in various contexts, especially in the area of Information Control. When viewed with the less pronounced but evident misalignment on some Affect of Service items, this incongruity might cause concern in light of how users report they actually use library and non-library resources when seeking information. It seems library staff have not yet internalized the extent to which many users prioritize unmediated access to easy-to-use, quality content and services and de-emphasize traditional mediated interactions with library staff. This poses a challenge for library leadership to work with staff to better align organizational service priorities with evolving user needs and demonstrated behaviors. The job of aligning staff and user service priorities is complicated by the disparate, and sometimes conflicting, service priorities of our core user groups, especially faculty and undergraduates in terms of how they use both our physical facilities and deep research collections.

Limitations

This analysis rests on the assumptions that users’ desired scores on the LibQUAL+® survey can be used to indicate the relative importance of a survey item (and the service that item represents), as well as the basis of a ranking of users’ service priorities. The survey instrument does not ask respondents to prioritize the items in order of importance, thus our creation of a priority index based on desired mean rankings.

Other possible limitations include the sample size of library staff included in the analysis and the point of view staff take when responding to the survey. In 2005, the University of Texas Libraries employed 138 professional staff and 298 support staff. Forty-nine library staff submitted usable surveys (8.9% of total library staff; 5.7% of total usable surveys submitted). Given the low response rate for library staff, it is possible that results were affected by some type of response bias. For example, it may be that only staff most committed to high-quality service were motivated to respond to the survey. However, such a bias would more likely impact absolute desired ratings and would less likely impact the relative priorities used in this analysis. When library staff are sent an e-mail

request to respond to the survey, they are asked "to complete the survey and let us know how you think we are meeting our users' expectations in these areas." It is unclear whether staff choose to respond from a user's point of view or from that of a service provider. It is also unclear if this difference in point of view would significantly affect desired ratings given a library staff member's dual roles as both information provider and consumer. Is it possible for library staff to successfully distinguish between these roles? There is much evidence that we all suffer from the inability to eliminate this type of bias from our interpretation of information.²¹

Future research

An obvious direction for extending this analysis is to investigate whether these results can be generalized across the entire Association of Research Libraries (ARL) cohort. Are the misalignments in service priorities evident in the University of Texas Libraries data reflected in the ARL cohort data for the same survey administration? If so, library leaders might do well to re-evaluate their understanding of the service priorities of library staff in academic libraries across North America, their relationship to the priorities of their core users, and to academic libraries' ability to support the teaching, learning, and research missions of their parent institutions.

It might also be useful to extend the analysis historically to investigate any possible divergence of service priorities between staff and users over time. Are the service priorities of staff and users diverging over time? If so, is this divergence accelerating as user desires and behaviors rapidly evolve? What implications would results of this nature have on future staff development considerations on the part of library leaders? Several years of survey data at both the local and cohort levels are available for attempting such an analysis.

Finally, any analysis of the alignment of staff and user service priorities, especially one that purports to indicate some misalignment between the two, begs the question of whether there are circumstances when staff service priorities need not necessarily align with those of users. Should users' service priorities necessarily drive organizational service priorities, and thus those of staff, for academic libraries? Many library leaders have answered this question affirmatively, and the creation and large-scale implementation of user-

centered quality assessment tools like LibQUAL+® show widely held support for utilizing users' service preferences in administrative decision-making and resource planning. A productive next step would be for library leaders to use the information gained by identifying misalignments in priorities between staff and users to adjust service profiles to better meet users' needs and preferences. Library leaders should provide clear direction and support for staff development efforts to help bridge any identifiable gaps between the services prioritized by users and library staff. Appropriately aligning staff service priorities with those of users is a necessary step for academic libraries to better engage the research, teaching, and learning missions of their parent institutions.

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APPENDIX A: Sample LibQUAL+® survey



University of Texas Libraries

THE UNIVERSITY OF TEXAS AT AUSTIN

University of Texas at Austin

Welcome!

We are committed to improving your library services. Better understanding your expectations will help us tailor those services to your needs.

We are conducting this survey to measure library service quality and identify best practices through the Association of Research Libraries' LibQUAL+™ program.

Please answer all items. The survey will take about **10 minutes** to complete. Thank you for your participation!

Please rate the following statements (1 is lowest, 9 is highest) by indicating:

Minimum -- the number that represents the *minimum* level of service that you would find acceptable

Desired -- the number that represents the level of service that *you personally want*

Perceived -- the number that represents the level of service that *you believe* our library currently provides

For each item, you must EITHER rate the item in all three columns OR identify the item as "N/A" (not applicable). Selecting "N/A" will override all other answers for that item.

When it comes to...		My Minimum Service Level Is		My Desired Service Level Is		Perceived Service Performance Is		N/A
		Low	High	Low	High	Low	High	
1)	Employees who instill confidence in users	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
2)	Making electronic resources accessible from my home or office	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
3)	Library space that inspires study and learning	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
4)	Giving users individual attention	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
5)	A library Web site enabling me to locate information on my own	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
6)	Access to photocopying and printing facilities	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
7)	Employees who are consistently courteous	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
8)	The printed library materials I need for my work	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
9)	Quiet space for individual activities	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
10)	Readiness to respond to users' questions	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
11)	The electronic information resources I need	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
12)	Making me aware of library resources and services	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
13)	Employees who have the knowledge to answer user questions	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
14)	Efficient interlibrary loan / document delivery	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
15)	A comfortable and inviting location	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
16)	Employees who deal with users in a caring fashion	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
17)	Modern equipment that lets me easily access needed information	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A
18)	Convenient service hours	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	1	2 3 4 5 6 7 8 9	N/A

19)	Employees who understand the needs of their users	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	N/A
20)	Easy-to-use access tools that allow me to find things on my own	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	N/A
21)	A getaway for study, learning, or research	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	N/A
22)	Willingness to help users	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	N/A
23)	Making information easily accessible for independent use	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	N/A
24)	Print and/or electronic journal collections I require for my work	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	N/A
25)	Community space for group learning and group study	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	N/A
26)	Modern equipment	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	N/A
27)	Dependability in handling users' service problems	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	N/A

Please indicate the degree to which you agree with the following statements:

28)	The library helps me stay abreast of developments in my field(s) of interest.	1 2 3 4 5 6 7 8 9 <i>Strongly Disagree</i>	<i>Strongly Agree</i>
29)	The library aids my advancement in my academic discipline.	1 2 3 4 5 6 7 8 9 <i>Strongly Disagree</i>	<i>Strongly Agree</i>
30)	The library enables me to be more efficient in my academic pursuits.	1 2 3 4 5 6 7 8 9 <i>Strongly Disagree</i>	<i>Strongly Agree</i>
31)	The library helps me distinguish between trustworthy and untrustworthy information.	1 2 3 4 5 6 7 8 9 <i>Strongly Disagree</i>	<i>Strongly Agree</i>
32)	The library provides me with the information skills I need in my work or study.	1 2 3 4 5 6 7 8 9 <i>Strongly Disagree</i>	<i>Strongly Agree</i>
33)	In general, I am satisfied with the way in which I am treated at the library.	1 2 3 4 5 6 7 8 9 <i>Strongly Disagree</i>	<i>Strongly Agree</i>
34)	In general, I am satisfied with library support for my learning, research, and/or teaching needs.	1 2 3 4 5 6 7 8 9 <i>Strongly Disagree</i>	<i>Strongly Agree</i>
35)	How would you rate the overall quality of the service provided by the library?	1 2 3 4 5 6 7 8 9 <i>Extremely Poor</i>	<i>Extremely Good</i>

Please indicate your library usage patterns:

36)	How often do you use resources on library premises?	☐ Daily ☐ Weekly ☐ Monthly ☐ Quarterly ☐ Never
37)	How often do you access library resources through a library Web page?	☐ Daily ☐ Weekly ☐ Monthly ☐ Quarterly ☐ Never
38)	How often do you use Yahoo(TM), Google(TM), or non-library gateways for information?	☐ Daily ☐ Weekly ☐ Monthly ☐ Quarterly ☐ Never

Please answer a few questions about yourself:

39)	The library that you use most often: ☐ Architecture and Planning Library ☐ Benson Latin American Collection ☐ Center for American History ☐ Chemistry Library ☐ Classics Library ☐ Engineering Library ☐ Fine Arts Library ☐ Geology Library ☐ Harry Ransom Humanities Research Center ☐ J.J. Pickle Research Campus ☐ Life Science Library ☐ Marine Science Library ☐ Perry-Castañeda Library ☐ Physics Mathematics Astronomy Library ☐ Public Affairs Library ☐ Tarlton Law Library ☐ Undergraduate Library

40)	Age:	☐ Under 18 ☐ 18 - 22 ☐ 23 - 30 ☐ 31 - 45 ☐ 46 - 65 ☐ Over 65
41)	Sex:	☐ Male ☐ Female

42) Discipline:

- ☐ Architecture
- ☐ Business
- ☐ Communication
- ☐ Education
- ☐ Engineering & Computer Science
- ☐ Fine Arts
- ☐ Information
- ☐ Law
- ☐ Liberal Arts: Humanities
- ☐ Liberal Arts: Social Sciences
- ☐ Natural Sciences
- ☐ Nursing
- ☐ Other
- ☐ Pharmacy
- ☐ Public Affairs
- ☐ Social Work
- ☐ Undecided

43) Position:

(Select the ONE option that best describes you.)

Undergraduate: ☐ First year
☐ Second year
☐ Third year
☐ Fourth year
☐ Fifth year and above
☐ Non-degree

Graduate: ☐ Masters
☐ Doctoral
☐ Non-degree or Undecided

Faculty: ☐ Adjunct Faculty
☐ Assistant Professor
☐ Associate Professor
☐ Lecturer
☐ Professor
☐ Other Academic Status

Library Staff: ☐ Administrator
☐ Manager, Head of Unit
☐ Public Services
☐ Systems
☐ Technical Services
☐ Other

Staff: ☐ Research Staff
☐ Other staff positions

44) Please enter any comments about library services in the box below:

- 45)** Enter your e-mail address in the box below if you would like to enter an optional drawing for a prize. Your e-mail address will be kept confidential and will not be linked to your survey responses. (Not required)

Thank you for participating in this library service quality survey!

APPENDIX B: Adequacy Gap by User Group, 2001-2005

	2001 2002 2003 2004 2005 2005										2001 2002 2003 2004 2005 2005										2004 2005 2005									
	Undergraduate					Rank	Graduate					Rank	Faculty					Rank	Staff	Rank										
Information Control	0.22	0.54	0.54	0.72	0.69	3	0.45	0.37	0.32	0.22	0.57	5	0.27	0.26	0.49	0.23	0.12	5	-0.34	-0.08	8									
	0.43	0.61	0.80	0.81	0.86	6	0.70	0.51	0.58	0.49	0.45	6	0.45	0.42	0.39	0.43	0.30	6	0.00	0.23	13									
	-0.15	0.69	0.70	1.02	0.78	1	0.40	0.46	0.27	0.34	0.44	3	0.20	0.21	0.11	0.29	0.31	2	0.45	0.77	22									
	0.34	1.02	0.77	0.62	0.82	7.5	0.53	0.39	0.48	0.16	0.38	4	0.31	0.32	0.24	0.00	0.16	4	-0.66	-0.33	6									
	0.36	0.79	1.06	0.76	0.74	2	0.53	0.45	0.66	0.45	0.47	7	0.34	0.36	0.43	0.28	0.37	10	0.02	-0.18	15									
	0.94	1.14	0.69	1.01		12.5	0.75	0.90	0.13	0.14	0.09	1.5	-0.60	-0.31	-0.01	-0.29	-0.57	1	0.18	0.42	10.5									
	0.61	1.00	0.98	0.75	0.73	16	0.88	0.95	0.33	0.46	0.42	10	0.00	0.13	0.16	0.10	0.03	8.5	0.45	-0.18	14									
		1.18	0.88	0.93	12.5			0.41	0.34	0.27		1.5			0.32	0.06	0.05	3	0.68	0.55	12									
Affect of Service	0.49	0.65	1.12	1.00	0.74	15	0.77	0.69	1.00	0.71	0.79	12	0.29	0.55	0.95	0.95	0.77	13	0.52	0.00	5									
	0.43	0.94	1.08	1.02	0.98	19	0.78	0.67	1.02	0.69	0.88	14	0.32	0.49	0.77	0.72	0.67	11.5	0.32	0.06	7									
	0.58	0.81	1.28	1.03	0.95	18	1.05	0.84	1.22	0.78	1.09	17	0.67	0.88	1.24	1.26	1.07	15	0.24	-0.02	10.5									
	1.21	0.88	1.21	1.19	1.21	21	1.21	0.98	1.41	1.12	1.28	20	0.92	1.02	1.29	1.20	1.24	16	0.13	-0.16	9									
	0.32	0.62	1.09	0.98	0.88	10	0.74	0.35	0.90	0.69	0.64	9	0.40	0.35	0.74	0.78	0.52	8.5	0.03	0.02	3									
	0.08	1.24	1.05	0.99	0.91	17	0.90	0.99	1.05	0.83	0.81	11	0.47	0.84	1.06	1.01	0.80	14	0.44	0.26	2									
	0.80	1.04	1.21	1.21	1.02	22	1.05	0.93	1.13	1.22	1.03	22	0.71	0.86	1.17	1.08	0.86	17	0.34	0.02	17									
	0.37	0.74	0.98	0.68	0.75	4.5	0.82	0.56	0.76	0.64	0.51	8	0.29	0.51	0.59	0.63	0.42	11.5	0.25	-0.41	4									
	0.72	0.97	1.20	0.93	0.65	14	1.11	0.85	1.20	0.90	1.03	13	0.96	0.85	1.26	1.21	0.87	7	0.05	-0.33	1									
Library as Place	0.08	0.79	0.99	0.81	0.79	4.5	0.05	0.39	0.93	0.50	0.68	15	0.52	0.63	1.15	1.05	0.96	19	-0.05	-0.06	18									
	0.41	0.73	0.82	0.54	0.76	11	0.89	0.81	0.66	0.11	0.39	19	0.78	1.08	1.24	1.14	0.54	20	-0.42	-1.38	19									
	0.06	0.86	1.01	0.70	0.58	7.5	0.10	0.56	0.83	0.45	0.66	18	0.48	0.79	1.57	1.37	1.00	21	-0.41	-0.48	16									
	0.25	0.64	1.05	0.67	0.80	9	0.72	0.51	1.07	0.37	0.61	16	0.88	0.82	1.25	1.08	0.92	18	-1.07	-1.27	20									
		0.81	0.47	0.83	18		1.08	0.81	0.81	0.85	21			1.86	1.62	1.82	22	-0.18	0.07	21										
	1.02	0.84	0.83				0.76	0.55	0.64				0.75	0.72	0.57				0.05	-0.13										

Positive Gaps 1.00 or higher

Negative Gaps (regardless of value)

Danger Zone: 2+ years of decreasing value or a gap of less than 0.3

red font - still positive, but lower than previous year

Adequacy Gap - Calculated by subtracting minimum score from perceived score

Desired Mean - Sum of user groups' scores divided by total number of responses by group

* Question asked for the first time in 2003

** Question worded slightly differently in 2001 and 2002

Library Assessment on a Budget: Using Effect Size Meta-Analysis to Get the Most Out of the Library-Related Survey Data Available Across Campus

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Abstract

Colleges and universities conduct regular surveys that provide space for local questions including library-related items. Unfortunately these surveys often use incomparable metrics and scales. Effect size meta-analysis is a statistical method used to combine such disparate results. The method is examined as a practical, sustainable, and effective library assessment technique using data from Radford University.

Introduction

Data related to library service and resources can exist in the results of surveys conducted across campus for non-library reasons. Many colleges and universities use surveys that provide a limited space for local university-specific questions such as the National Survey of Student Engagement (NSSE) with space for twenty local questions¹ or the Higher Education Research Institute Faculty Survey (HERI) with space for twenty-one local questions.² Surveys are also created locally by one of the university's academic units (e.g., Student Affairs) for a specific purpose, such as assessing student satisfaction with either a particular course (e.g., Radford University's (RU's) University 100 Student Satisfaction Survey) or with their entire undergraduate experience (e.g., RU's Undergraduate Exit Survey).³

Often the university library can negotiate for the placement of several questions about library resources or services in these instruments. Carefully chosen, these questions provide useful data for selected topics of library concern, such as adequate hours of operation or access to electronic resources. For instance, Radford University's McConnell Library currently has four questions in the HERI survey, four in the Undergraduate Exit Survey, and one in the University 100 Student Satisfaction Survey.⁴ For libraries with limited assessment budgets, getting several library-related questions on these surveys can be an inexpensive source of additional information about its user needs and their perceptions of library services and resources.

One barrier to combining the data from

various sources is the often incompatible metrics, scales, and outcomes reporting used by many surveys. For example, for quantitative response questions, Radford University's University 100 and Undergraduate Exit surveys use a 4-point Likert scale and report outcomes as means, frequency distributions, and percentages⁵; the NSSE uses a 4-point Likert scale and reports outcomes in means, statistical significance, effect size *d*, frequency distribution and percentages⁶; while the HERI survey uses no Likert scale and reports only percentages.⁷

One solution is to use meta-analysis, a quantitative method of research synthesis developed in the social sciences to handle data comparisons across disparate studies in a statistically defensible manner. This study explores the use of effect size meta-analysis as a library assessment tool. The effect size metrics Cohen's *d* and *U*₃ Differential are used to compare the results of six pairs of mean values from analogous, library-related survey items from two different surveys given to RU undergraduates in 2005, the LibQUAL+® survey and the Undergraduate Exit Survey. These six item pairs, representing six underlying constructs or phenomena, were hours of operation, access to information, staff quality, collection quality, user's ability to find information and user's ability analyze information. Next, a meta-analysis of the effect sizes for same six constructs was conducted. The effect size and meta-analytic process and its results are examined as a library assessment technique in light of its practicality, sustainability, and effectiveness.

Effect size

Effect size is the measure of the magnitude or amount of a given phenomenon present in the population under study; the larger the magnitude, the greater the manifestation of the phenomenon (or construct).⁸ The type of effect size used in this study is the standardized mean difference. It examines the difference between two groups by measuring the size of the difference between their

respective sample means.⁹ These groups are defined experimentally, or in the case of this study, non-experimentally using graduating versus non-graduating seniors.¹⁰ The standardized mean difference expresses the sample mean difference in standard deviation units which are comparable across related studies using meta-analytical techniques.¹¹

The use of an effect size metric removes the traditional over-reliance on null hypothesis significance testing (NHST) as the sole method of determining the significance of any findings.¹² Effect size does not suffer from either NHST's sensitivity to sample size, nor its strictly dichotomous results (significant/not significant) that gives neither the degree of significance nor whether a statistically significant finding is trivial or not.¹³

Meta-analysis

Meta-analysis is a systematic, analytical, and explicit method of research synthesis that combines often disparate and conflicting findings from conceptually comparable empirical studies that use divergent research designs and metrics.¹⁴ The process involves converting the various unstandardized metrics used by the constituent studies into a common standardized effect size metric that is then weighted by sample size and averaged.¹⁵ The results are more accurate, credible, and have more statistical power (i.e., the ability to detect any significant differences) than any single constituent study.¹⁶

Meta-analysis is applicable not only to large-scale projects involving thirty or more studies but also to small-scale projects designed to aggregate and integrate findings from a single unit (e.g., surveys conducted by a university or academic library) or a group of researchers (e.g., assessment librarians). These small data sets have the advantage of a common conceptual background, fewer measurement errors, more rapid findings, and an ease of integration into any future, large-scale meta-analyses.¹⁷

Assumptions

This paper assumes that the reader possesses some understanding of basic statistical concepts, such as means, variance, standardized scores, and null hypothesis significance testing (NHST). It assumes a "good-enough" approach to library assessment, one that strives for the greatest possible statistical accuracy, reliability, and validity given the time

and resource limitations within which most academic libraries operate.¹⁸

The Likert scale data used in this study are assumed to be interval-scaled rather than ordinal-scaled.¹⁹ This allows the use of parametric statistical procedures that are more precise, accurate, and familiar than the non-parametric ones used for ordinal data.²⁰

No formulas are given in this paper as it is assumed that the calculations will be done using one of the software packages freely available online. The programs used in this study are given in the data analysis section below. Alternatively, the relevant statistical formulas can be converted into their *Excel* equivalents, allowing the spreadsheet to do the work.

Methodology

The general approach used in this paper is a non-experimental research synthesis. That is, this study will compare the means of non-experimentally related groups (graduating seniors and non-graduating seniors) using data from different surveys studying the same phenomenon or construct.²¹ The results will then be synthesized using meta-analysis into an average effect size of the perceptions of the Radford University seniors of the selected library services and resources.²² This is different from an experimental synthesis which attempts to discover which survey instrument, teaching technique, or medical treatment gives the best results.²³

The level of analysis used in this study is the independent group, which often is required when statistically synthesizing research results.²⁴ The unit of analysis for this study is the individual comparison, which is considered an independent estimate for the purposes of research synthesis meta-analysis.²⁵

Metrics

Cohen's d

Cohen's *d* is a popular, commonly used standardized mean difference measure that is sometimes referred to as Hedges's *g*.²⁶ It is particularly useful for evaluating the magnitude and direction (positive or negative) that exists between two group means; the larger the magnitude, the greater the possibility that the difference is meaningful.²⁷ In the non-experimental comparisons however, the focus is on the relative magnitude of the mean difference, not its direction.

Hence only the absolute value of d will be reported in this study.²⁸

As a standardized statistic, Cohen's d "expresses the distance between the two group means in terms of their common standard deviation. For example, if $d = .40$, it means that 4/10 of a standard deviation separates the two means."²⁹ Cohen developed a set of qualitative effect size guidelines for interpreting the magnitude of d results. Ignoring direction, a small effect size is $d \leq 0.20$, medium is $0.20 < d < 0.80$, and large is $d \geq 0.80$.³⁰

These qualitative effect size guidelines offer no insight into the practical significance of any effect size d results in established research areas. Practical significance can only be determined by disciplinary criteria, expertise, and comparison with similar findings or benchmarks in the field. For instance, an effect that is considered to be small in sociology maybe thought of as medium in psychology.³¹ In new research areas, such as the area being explored in this study, appropriate criteria and benchmarks are not yet developed and are not available for determining practical significance. Hence Cohen's³² qualitative guidelines will temporarily serve in this role in this study.³³

Effect size d does not require an extensive background in inferential statistics to understand. Therefore, Cohen's d has the added advantage of being relatively easy to communicate to other practitioners as well as to non-specialists and policy makers within the university such as the provost.³⁴

U₃ and U₃ Differential

U₃ metric. U₃ is an effect size metric developed by Cohen³⁵ that utilizes the relative degree of overlap of the distributions of the two groups under study.³⁶ It shows the "percentage of the scores in the lower-measured group was exceeded by the average score in the higher-measured group."³⁷ U₃ is related to Cohen's d , its values ranging between 50% for $d = 0$ to 99.9% for $d = 3.0$.³⁸ This means in effect that U₃ is reporting the effect size d as a percentage, which makes d results more understandable and easier to communicate to non-specialists.³⁹

U₃ Differential. The main drawback to U₃ is when $d = 0$, then U₃ = 50%, a relationship that can be confusing or difficult to grasp for non-specialists. To minimize this potential confusion, this study will report the U₃ associated with a given effect size d as the U₃ Differential (U_{3DIFF}). The U_{3DIFF} is an adaptation of the U₃ statistic developed by McNamara⁴⁰ to show the percent advantage that the

larger-measured group has over the smaller-measured group in an experimental context. It is calculated by subtracting the U₃ of the smaller-measured group from that of the larger-measured group. For example, when there is no effect size ($d = 0$) each of the two groups under consideration has a U₃ of 50%. Therefore, U_{3DIFF} = 50% - 50% = 0%, indicating that neither group has an advantage. If the effect size for two groups is $d = 0.4$, then U₃ = 65.5% for the larger-measured group and U₃ = 50% for the smaller-measured group. Then the U_{3DIFF} = 65.5% - 50% = 15.5%, indicating that the larger-measured group has a 15.5% advantage over the smaller-measured group.

Confidence Intervals

A sample mean of a group can function as the point estimate of the mean parameter for that group's actual population. The point estimate contains sampling error, so it will rarely be equal to the parameter value. To reflect the amount of sampling error in the point estimate, a confidence interval (CI) is constructed around it reflecting a given level of probability.⁴¹ The interval estimation part of the CI is the range of mean values centered on the mean point estimate and extending an equal distance on either side of it. The confidence part of the CI is the probability or accuracy of the interval estimate, traditionally set at 95%.⁴²

A 95% CI can be used as a NHST (two-tailed, $p < 0.05$) without any additional calculations because it contains the same information as a traditional NHST such as the independent t -test.⁴³ If the 95% CI contains the $d = 0$ value, then the mean difference is not statistically significant (i.e., fail to reject H_0). If the 95% CI does not contain the $d = 0$ value, then the mean difference is statistically significant (i.e., reject H_0).⁴⁴ Note that CIs are independent of any NHST function,⁴⁵ but if using a NHST design, a CI should be constructed for every effect size, not just the statistically significance ones. The failure to do so will inflate the effect size estimates in any future meta-analysis.⁴⁶

Effect Size Criterion

One of the major advantages to using effect size metrics is the ability of researchers to use it as an effect size criterion (ESC) or action threshold, determined before the study begins. If the criterion is equaled or exceeded, then the desired action is initiated. Otherwise, no action is taken.⁴⁷ In an experimental or intervention study in education research the ESC is traditionally set at $d = 0.50$ (U_{3DIFF} = 19%) or a 19% advantage to the group with

the highest mean. Effect sizes of $d = 0.25$ ($U_{3DIFF} = 10\%$) and $d = 0.33$ ($U_{3DIFF} = 14\%$) are also considered significant.⁴⁸ This study follows McNamara's⁴⁹ recommendation and set the ESC at $d = 0.50$ ($U_{3DIFF} = 19\%$) even though this is a non-experimental comparison study. This means that if the resulting effect size $d \geq 0.50$ ($U_{3DIFF} \geq 19\%$), then the action taken will be to further investigate why this difference is so high, especially since both the LibQUAL+® and the Radford University Undergraduate Exit surveys are designed to measure several of the same constructs.

Data collection

This study used the pre-existing 2005 data from two survey instruments, the LibQUAL+® and the Radford University Undergraduate Exit surveys. The LibQUAL+® survey is a nationally developed instrument designed to capture the respondents' opinion of library service quality using twenty-two questions and a free-text comment box. The RU Undergraduate Exit survey is a locally developed survey instrument designed to capture the graduating seniors' opinions of their undergraduate experience using approximately 121 questions, of which six are library-related. Both instruments use a Likert scale format for the quantitative responses, with LibQUAL+® using a 9-point scale and RU's Undergraduate Exit survey using a 4-point scale.

Data analysis

Six library-related constructs were identified for comparison in this study: Access (availability and relative ease of getting to needed library resources), Analysis (ability to determine information quality and relevance), Collections (quality and quantity of library resources needed by the user regardless of format), Retrieval (ability to locate and obtain relevant information as needed), Hours (access to the physical library), and Staff (quality and quantity of available library staff). Questions related to each

of these constructs were identified from both of the surveys, and served as the dependent variables. If more than one question from the same instrument was deemed relevant to a particular construct, their scores were aggregated to provide a new separate variable (e.g., LibQUAL+® questions IC-1 and IC-7 both related to the construct "Access," so were combined into a new variable "LQ-Access").

The scores for each of the questions/variables were then converted to a common 4-point Likert scale. Next the questions/variables in each construct were paired for comparison and the effect size d and associated confidence interval was calculated for each pair using the Effect Size Generator program.⁵⁰ These CIs were constructed using the central t approximation rather than the non-central t method. The latter's greater relative precision is not considered significant enough to outweigh the disadvantage of its prohibitive computational complexity.⁵¹

The comparisons for each construct then were combined into a single meta-analytic effect size d with its associated CI using the Meta-Analysis Generator program.⁵² The calculations for U_{3DIFF} were done by first using the "d to U_3 " software to determine the U_3 for each d statistic.⁵³ Then 0.50 was subtracted from each U_3 generated above to get the U_{3DIFF} . The results of all the calculations were entered into an *Excel*/spreadsheet for storage and future analysis.

Findings and Discussion

Findings

The effect sizes ranged from the small effect size for Collections, $d = 0.06$ ($U_{3DIFF} = 2.4\%$), to a medium effect size for Analysis, $d = 0.67$ ($U_{3DIFF} = 24.9\%$) (see Table 1 below). Three (50%) of the constructs had small effects sizes (Collections, Hours, and Staff) while three (50%) had medium effect sizes (Access, Analysis, and Retrieval.) Two of the six (33%) constructs (Analysis and Retrieval) exceeded the ESC.

Table 1. Effect size and meta-analysis (Average_w) results for the six library constructs Access, Analysis, Collections, Retrieval, Hours, and Staff.

Constructs	<i>d</i>	<i>U</i> _{3DIFF}	SD	n	95% Confidence Interval			<i>d</i> ≥ ESC?	Effect Size
					Lower	Upper	Length		
Access	0.24*	9.5%	0.70	614	0.09	0.40	0.31	No	Medium
Analysis	0.67*	24.9%	0.82	634	0.51	0.83	0.32	Yes	Medium
Collections	0.06	2.4%	0.67	603	-0.10	0.22	0.32	No	Small
Retrieval	0.52*	19.8%	0.75	634	0.36	0.68	0.32	Yes	Medium
Hours	0.16*	6.4%	0.81	641	0.01	0.32	0.31	No	Small
Staff	0.08	3.2%	0.71	555	-0.08	0.25	0.33	No	Small
Average _w	0.30	11.8%	0.23	3681	-0.15	0.74	0.89	No	Medium

Notes:

* statistically significant, two-tail, $p < 0.05$.

1. Lower and Upper are the 95% confidence interval endpoint values for the associated *d*.

2. Length: size or magnitude of the 95% confidence interval.

3. $d \geq \text{ESC}$?: Does *d* equal or exceed the Effect Size Criterion (ESC) of 0.50?

4. Effect Size: Small is $d \leq 0.20$, Medium is $0.20 < d < 0.80$, and Large is $d \geq 0.80$.

5. Average_w: average weighted value determined by meta-analysis.

The meta-analysis yielded an Average_w medium effect size of $d = 0.30$ ($U_{3DIFF} = 11.8\%$), with a standard deviation (SD) of 0.23, all lower than those of the individual constructs as expected. However, the length of the Average_w 95% CI (0.89) is over twice as large as that expected due to sampling error (i.e., 0.32 or less) indicating the presence of previously hidden groups.⁵⁴ In addition, both the Analysis and Retrieval constructs had *d* statistics over twice as large as the others, indicating they

did not belong in the same group with the other four constructs. This finding in turn led to the reorganization of the constructs into the Services and Resources (S&R) Group composed of the Access, Collections, Hours, and Staff constructs and the Information Literacy Instruction (ILI) Group made up of the Analysis and Retrieval constructs. A new meta-analysis was done for each group and the results summarized in Table 2 below.

Table 2. Effect sizes and meta-analysis (Average_w) results for the Service and Resources (S&R) and Information Literacy Instruction (ILI) Groups of library constructs.

<u>Constructs</u>	<u>d</u>	<u>U_{3DIFF}</u>	<u>SD</u>	<u>n</u>	<u>95% Confidence Interval</u>			<u>d ≥ ESC?</u>	Effect <u>Size</u>
					<u>Lower</u>	<u>Upper</u>	<u>Length</u>		
<u>S&R Group</u>									
Access	0.24*	9.5%	0.70	614	0.09	0.40	0.31	No	Medium
Collections	0.06	2.4%	0.67	603	-0.10	0.22	0.32	No	Small
Hours	0.16*	6.4%	0.81	641	0.01	0.32	0.31	No	Small
Staff	0.08	3.2%	0.71	555	-0.08	0.25	0.33	No	Small
Average _w	0.14	5.6%	0.07	2413	-0.002	0.28	0.28	No	Small
<u>ILI Group</u>									
Analysis	0.67*	24.9%	0.82	634	0.51	0.83	0.32	Yes	Medium
Retrieval	0.52*	19.8%	0.75	634	0.36	0.68	0.32	Yes	Medium
Average _w	0.59*	22.2%	0.07	1268	0.45	0.74	0.29	Yes	Medium

Notes: see Table 1 notes above.

The Service and Resources Group's effect sizes are 75% small (Collections, Hours, and Staff) and 25% medium (Access). They range from a small $d = 0.06$ ($U_{3DIFF} = 2.4\%$) for Collections to a medium $d = 0.24$ ($U_{3DIFF} = 9.5\%$) for Access. The Information Literacy Instruction Group's effect sizes, on the other hand, are all medium and range from $d = 0.52$ ($U_{3DIFF} = 19.8\%$) for Retrieval to $d = 0.67$ ($U_{3DIFF} = 24.9\%$) for Analysis. Meta-analysis of the effect size d for each group yielded an Average_w small effect size $d = 0.14$ ($U_{3DIFF} = 5.6\%$) for the S&R Group and a medium effect size $d = 0.59$ ($U_{3DIFF} = 22.2\%$) for the ILI Group. All the ILI Group constructs had d statistics that exceeded the pre-set ESC. Note that the SD of the Average_w in Table 1 is over twice that of the two groups in Table 2, confirming that the decision to divide the results into two groups was correct.⁵⁵

Discussion

An examination of the Average_w for the Services and Resources and Information Literacy Instruction Groups in Table 2 above shows the positive effects of combining results from different sources. Meta-analysis improves the accuracy of the effect size estimate for each group by reducing the related sampling error, as seen in the reduction in 95% CI length and the SD for both the S&R and ILI Groups.⁵⁶ This happens because meta-analysis produces results for each group as if it were one study with a sample size of 2413 for the S&R Group, or 1268 for the ILI Group, rather than a series of individual studies with smaller sample sizes of 5-600.⁵⁷

The study results produced two constructs (Analysis and Retrieval) that exceeded the ESC. They are therefore candidates for follow-up study using targeted surveys or focus groups to find out why. These follow up efforts may uncover factors that are influencing these results. For example, the responses of the graduating seniors that participated in the Undergraduate Exit Survey may reflect a greater positive feeling about their college experience than those seniors that did not participate. The medium effect size d for the Analysis and Retrieval constructs may also reflect differences in respondent perceptions due to differences in gender or academic discipline. At a more fundamental level, further investigation may show that the questions chosen from the LibQUAL+® and Undergraduate Exit surveys as representative of the two constructs are not measuring these constructs, but something

altogether different.

Conclusions

Effect size meta-analysis using Cohen's d , U_{3DIFF} , and CI is applicable for library assessment because it is practical, sustainable, and effective. It is practical because the library-related data already exists in surveys conducted either by the library (e.g., LibQUAL+®) or another academic unit such as the Office of Academic Assessment (e.g., RU Undergraduate Exit Survey). To produce an effect size meta-analysis of this data requires no sophisticated statistical procedures,⁵⁸ and no purchase of specialized software to do the needed calculations. One can either use available freeware⁵⁹ or translate the formulas into *Excel* and let the spreadsheet do the work.

It is sustainable because non-library-related assessment surveys (e.g., NSSE and HERI) are already being done on a regular basis by other campus units (e.g., RU's Office of Academic Assessment). As long as this continues, these surveys will be an ongoing source of library-related data. Therefore the effect size meta-analytic process can be maintained indefinitely, with the findings from each survey iteration combined with the previously existing results in an ongoing meta-analytic synthesis.⁶⁰

Effect size meta-analysis is cost effective for the library because the costs of purchasing or creating the survey instrument and the logistics of administering it (data gathering costs) are borne by another academic unit, not the university library. The main library investment is in the time it takes the assessment librarian to negotiate the inclusion of library-related questions into an existing campus survey and to retrieve a copy of the results afterwards. The remaining costs for the library involve the cost of any necessary data clean-up and conducting the data analysis. The cost of data analysis can be reduced by the use of statistical freeware such as that used in this study.⁶¹

In addition, effect size meta-analysis is an effective way to synthesize data from pre-existing library surveys as well data from non-library-related surveys. For example, this study synthesized results from both the 2005 LibQUAL+® survey administered by the McConnell Library as well as the data from the 2005 Radford University Undergraduate Exit Survey administered by the Office of Academic Assessment. As the findings in Table 2 above show, meta-analysis produces statistically defensible results that are more

accurate and credible than any single constituent study,⁶² and are presented in a form readily understandable by non-specialists and policy makers such as university administrators.⁶³

The results of effect size meta-analysis are an ideal basis for effective follow-up action research into any of the constructs with *d* statistics that exceed the pre-set ESC (e.g., the Analysis and Retrieval constructs in Table 2 above).⁶⁴ These results in turn provide data useful for setting priorities and making the decisions that effect the ongoing improvement of library services and resources, a primary goal of library assessment.

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Return on Investment

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I have this recurring dream where my provost asks me what kind of return on investment (ROI) the university is receiving from its \$30 million annual investment in the libraries. I can tell from the tone of the provost's voice that he/she is not interested in hearing about how many staff or library materials or square feet the \$30 million buys. Nor is he/she going to be satisfied with our LibQUAL+® score. No, this provost wants to know what tangible difference the library is making in the university's educational, research, and public service programs, and whether the university is receiving an appropriate return on its significant investment in the libraries or whether the \$30 million might be better spent somewhere else on campus.

When I wake up from the dream, I do some poking around and discover that university administrators can demonstrate the return on investment of a college degree in multiple ways. Academic officers can point out the economic, social, and cultural returns on investment in college degrees.

Campus administrators, for example, can cite Census Bureau data that demonstrates college graduates earn about a million dollars more over their adult working life than high school graduates. Carnevale reports that the gap between the average yearly earnings of college graduates and high school graduates has increased from \$18,000 to \$22,000 during the last decade. The difference between wages of high school graduates and those with graduate degrees is \$45,000 a year in 2004 dollars.¹

Society also benefits from public investment in higher education. According to Cohn and Geske, highly educated women better prepare their children for the future and college graduates have a more optimistic view of their past and future personal progress.² The Institute for Higher Education Policy reports that college graduates provide increased tax revenues, greater workplace flexibility, increased consumption, increased workplace flexibility, and rely less on government financial support.³ The University of Michigan

Center for the Study of Higher and Postsecondary Education notes that, on average, college graduates are more open-minded, more cultured, more rational, more consistent, and less authoritarian, and that these attributes are passed along to succeeding generations as well.⁴

So, how might we measure the return on investment of an academic library? I remember from my business school days that ROI can be defined as: the benefit derived divided by the investment amount; the actual or perceived value of an expense; or the amount of return based on the amount of resources used to produce it.

I know, in dollars and cents terms, that the café in the library delivers a good return on investment because the library shares in the profits. I'm not so sure about the library's government documents stacks, though. It costs the university about \$262,500 a year to shelve and service print government documents and I think our users actually prefer the electronic versions when they are available.

I decide to look into what some of our library's principal costs and their actual or perceived benefits are, and here's what I find:

- *Information Technology Services, Electronic Resources & Computer Areas*—\$9,680,828—electronic journals and databases are rated the most important library resource (ranked 4.69 and 4.68/5 by users), there are more than 2 million downloads and searches annually, and 14% of their use directly supports funded research at the University of Connecticut (UConn). Computer areas are a high priority of students, too.
- *Books and Book Stacks*—\$3,643,778—books are heavily used and 11% of their use supports funded research at UConn. Books are rated very important by our users (4.59/5).
- *Print Journals/Binding/Journals Stacks*—\$3,313,094—based on user surveys, print journals are still somewhat heavily used and 14% of their use directly supports funded research at UConn. Print journals are rated pretty important (4.4/5) by users.

- *Archives and Special Collections*—\$3,085,364—houses the University's historical memory and signature research collections. These collections are not used (or known about) by 80% of our users, though, and are not ranked as important to users (3.41/5) as most of the library's other services.
- *Research and Instruction/Liaison Program*—\$2,890,428—reference assistance is the fifth most important service to users (4.29/5) and teaching directly supports UConn's Information Literacy General Education requirement. The Library Liaison program scores the second highest satisfaction rating (4.24/5) among users.
- *Reading Areas*—\$2,735,511—53% of our one million annual library users are just using space (i.e., not library collections or services). Babbidge Library is consistently rated as the best place on campus to study by the *Daily Campus* "Best in Storrs."
- *Circulation/E-Reserve*—\$1,038,710—we circulate 200,000 items/year and there are 400,000 reserve downloads/year. About 7.5% of the use directly supports funded research at UConn.
- *Document Delivery/Interlibrary Loan*—\$919,130—we "borrow" 30,000 items/year and 15% of its use directly supports funded research at UConn. DD/ILL scores the highest satisfaction rating (4.31/5) from users.

When I do some research to determine other ROI studies in libraries, I find that Florida's public libraries return \$6.54 (or \$2.9 billion) for every \$1 (or \$449 million) invested. The 2005 ROI study of study of Florida's public libraries used a statewide telephone survey, in-library surveys, and an input-output econometric model known as REMI (Regional Economic Modeling, Inc.) prepared by the Center for Economic Forecasting and Analysis at Florida State University.⁵

Digging a little deeper, a study by the University of South Carolina's School of Library and Information Science found a return on investment of \$4.48 per dollar spent on public libraries using a perception study of 3,689 public library users statewide.⁶ Also, as reported by Oder in the March 1, 2005 edition of *Library Journal*, a study by the British Library in 2004 (*Measuring Our Value*) found an estimated return of 4.4 times the level of public funding.⁷

I'm not, however, altogether convinced that

taxpayers would actually pay more taxes to enjoy more of these benefits of public libraries. Don't they ask respondents what they would be willing to pay instead of actually asking them to pay? And I don't come up with much at all for academic libraries. In fact, the best I can come up with in the *Library Journal* article is that:

"Daniel Barron, director of the University of South Carolina School of Library and Information Science, acknowledged that the valuation of library use remains an area for further inquiry. We need to bring attention to the idea that there are economic values to our services."⁸

I still have that recurring dream. I don't have very good data to provide my provost about the library's return on investment. I'm hoping that gatherings like this library assessment conference will start to provide us with some better models.

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Using the SAILS Test to Assess Information Literacy

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Abstract

The Standardized Assessment of Information Literacy Skills (SAILS) is a tool for programmatic-level assessment of information literacy levels of cohorts of college students. Project SAILS is located at Kent State University in Ohio. Since development began in 2000, the project has received significant support from Kent State University, the Association of Research Libraries, the Ohio Board of Regents, the Institute of Museum and Library Services, and eighty-two participating colleges and universities.

Background

Project SAILS began when a team of librarians at Kent State University identified a need to measure information literacy skills of students. The need emerged at the crossroads of increased accountability, the call for continual assessment, and the growing information literacy movement. Several important questions arose: Does information literacy affect student success? Where do students learn their information literacy skills? What role does the library play in information literacy levels of students? Are the resources allocated to library instruction worthwhile for the university? Answers to these questions require intensive and careful investigation. The investigation must begin with the answer to a seemingly simple question: How information literate are our students?

In 2000, there were no standardized assessment tools for information literacy. Although many researchers had developed tests for library skills, none appeared to have all the desired features we were looking for, which were:

- proven validity and reliability
- test questions that were not specific to a particular institution or library
- easy to administer on a large scale
- internal and external benchmarking
- data reports that clearly describe performance of groups of students

The primary goal of Project SAILS, then, has been to develop a standardized tool that has all the desired characteristics and that is based on the Information Literacy Competency Standards for Higher Education, published by the Association of College and Research Libraries.

Initial Funding and Resources

Development of the test instrument began in 2000. With support from Kent State University, three personnel began to write test questions to address specific information literacy objectives and then evaluated those questions with undergraduate students in one-on-one, small group, and field test settings.

In 2001, Project SAILS received its first external funding, a \$500 award from the Academic Library Association of Ohio. In 2002, Project SAILS received funding from the Ohio Board of Regents as part of a larger, multi-faceted information literacy project jointly implemented by Kent State University and Bowling Green State University. That same year, Kent State University received an award for the project from the Institute of Museum and Library Services, followed shortly by an agreement with the Association of Research Libraries to partner with Kent State University on the development of the tool.

The three-year, \$250,000 IMLS grant allowed us to continue development of the assessment instrument. Three phases of pilot testing with other institutions formed the basis of a results database that addressed internal and external benchmarking. Each phase examined both the test items and test administration, and participating institutions worked with us to develop data report content and test administration procedures. Institutions paid a fee to participate. Kent State contributed substantial funding and personnel time.

About the Test

The first major decision we faced was selecting the type of instrument that would give us the features

we desired. After much research and discussion, we chose to develop a multiple-choice test. We recognized the limits of this testing format but determined it to be best suited for the objectives of the project, particularly the need for large-scale testing.

We also decided that the best way to make the instrument easy to administer was to make it flexible. Although a Web-based test is easy for many institutions, some (including Kent State) do not have the facilities to administer a Web-based test to very large numbers of students. A paper test option was therefore necessary to make the test useful for those institutions.

Another early decision was to use item response theory as our measurement model. When scoring a test, the item response theory model takes into account both the difficulty of the item and the student's ability. Many classroom tests use classical test theory, which assigns a score to a student's performance based on the percentage of the number correct out of the total number of items taken on a test. In classical test theory, no attempt is made to differentiate among the difficulty levels of concepts being measured by the test or the items that are used to measure them. With its complexity of conceptual difficulty, information literacy measurement lends itself to a scoring model that does indeed address differences in difficulty level. As a result, item response theory, specifically the one-parameter Rasch model, was selected.

At about the same time that we set the objectives for the project, the Association of College and Research Libraries (ACRL) published its "Information Literacy Competency Standards for Higher Education."¹ Because facilitating cross-institutional comparison was a significant goal for the project, the ACRL document was reviewed and eventually selected as the standards that we would use to measure information literacy. The ACRL document

includes learning objectives for four of the five standards; no performance outcomes or objectives were written for Standard Number 4: "The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose." We decided to base the test on the other four standards. The next step in the test creation was to develop items.

Item Development

Our item development started with the outcomes or objectives that we were seeking to measure. Like most academic standards documents, the ACRL information literacy document is organized hierarchically:

- Standards
 - Performance Indicators
 - Outcomes
 - Objectives

We decided to write items to the most specific level available in the ACRL document, which in most cases was the objective level. When no objective was available, we wrote items at the outcome level.

Regardless of the level of specificity that we were measuring, the writing process was the same. We started by reviewing the outcome or objective and asking ourselves how we would know whether a student demonstrated that competency. Once we settled on an approach, we drafted the question stem and a correct response. We then drafted two to four incorrect responses. In order for these incorrect responses, or distractors, to be effective, they had to be plausible. They did not need to necessarily use real-world examples, such as real journal titles or author names, as long as they were plausible. See Figure 1 for an ACRL objective and its corresponding SAILS item.

Figure 1: ACRL Objective and Corresponding SAILS Item

ACRL Objective 1.3.1.1: Determines if material is available immediately.

SAILS Item:

What part of this library catalog record would indicate whether you could obtain this book immediately?

Title:	New Guide to Business Planning.
Publisher Info:	New York: Acme Business Press, 2000.
Authors:	Smith, Robert
Subjects:	Business plans Corporate strategy

LOCATION	CALL #	STATUS
Main Library	HB 4567 .A67 2000	Available

Call number
XStatus
Location
Publisher Info
Subjects

Early in the item development stage, we settled on a three-step process for ensuring that the items we wrote measured the outcome that they were designed to address. We wanted to find out if any items were confusing to students due to problems in the wording, the distractors that we used, or any other issues related to poor item development.

The first step was to get feedback from individual students for each item by employing a technique referred to as cognitive interviewing. In cognitive interviewing, a member of the target audience for a survey or, in this case, a test instrument is asked to review each item and discuss first what he feels is being asked by the item, how he would respond to the item, and any problems with the wording or terminology that he can identify in the item. Because the SAILS test was designed for undergraduate students, we did all of our cognitive interviewing with undergraduates. Quite often, we worked with undergraduate

student employees due to their availability. An early concern was the degree to which their feedback would be affected by their work experience in the library. Early cognitive interviewing alleviated these concerns as it became clear to us that their work in the library had little impact on their information literacy skills. This is likely due to the nature of the positions that undergraduates fill within the organization; they tend to be focused on very specific duties.

At the cognitive interviewing stage, each item was reviewed by at least three students. It is at this point in the process that we received our best and most in-depth feedback on the items that we wrote. Items could be tweaked, revised, or completely rewritten as a result of cognitive interviewing. If the item required significant revisions (for example, a rewrite of the stem or all distractors) or a complete rewrite, it was reintroduced into the process. If the item did not require significant or complete

revision, it moved onto the next step—small-group testing.

In small-group testing, we took a selection of 25-30 new items to a class of approximately twenty students. The small-group testing was much like cognitive interviewing, except that we looked for group consensus on the meaning and wording of items. The emphasis at this point was on identifying problematic items. Due to the limited availability of full class time, we could not spend more than one session with any one group of students. Thus, the time we did spend had to be more focused than in the cognitive interviewing stage. We often used the feedback that we gathered at that first stage to identify potentially problematic items and focus the small-group discussion on them, at least initially. As in the first step of the process, items could be tweaked, revised, or rewritten based on small-group testing. If these revisions were significant, the item would once again be reintroduced into the process from the beginning. Those items that made it through small-group testing were then field tested.

At the field testing stage, the items were given to at least 500 students in order to gather data on the difficulty of the items as a whole and the responses (correct and incorrect) that make up the item. Once 500 students had responded to the items, we analyzed the data to first get a difficulty score for the item, using Winsteps, which is item response theory software. We then analyzed the difficulty score for that in relation to the other test items to determine whether the difficulty or ease with which students answered the item correctly corresponded with our expectations for that item. We then reviewed the content, wording, and layout of every item for which the difficulty score was significantly higher or lower than expected.

We also ran a distractor analysis for each item. This analysis looked at how many times a particular response was selected, and it examined response selections of students at differing ability levels. Those items where a distractor was selected more often than the correct response were potential problems, as the more attractive incorrect response could disproportionately affect the difficulty of the item. In some cases, the distractor was more appealing due to the wording of the question stem, or the distractor itself. Occasionally a distractor was appealing because it was arguably a correct response. Some distractors were problematic because they held greater appeal for the more able students than for the less able students. In other

cases, the distractor's attractiveness was not a problem.

Just as in the earlier stages of the item development, the items for which problems were exposed at this stage were revised and reintroduced into the three-stage process. Those that made it through field testing were then added to the item bank and are presented to students and used in scoring of the SAILS test.

We continued to use this three-step process through the development of the entire SAILS item bank and intend to do so as items are developed to measure the ACRL objectives that are not yet covered by the instrument.

Skill Set Development

After the initial items were added to the bank and we scored our first responses to the test, it became apparent that we needed to reconsider the way in which we measured information literacy in order to meet the project objective of providing reporting of results that would be useful to information literacy instructional assessment. Although the ACRL document provided good learning outcomes and objectives to use in measuring information literacy, we found that their arrangement into the five standards did not facilitate a good assessment of information literacy instructional sessions or programs. We decided to rearrange the ACRL outcomes and objectives that we were measuring (or for which we intended to write items) into skill sets that we felt would better reflect the ways that information literacy is taught. In order to allow participating institutions to determine the efficacy of their instruction within these skill sets, we decided to report a score of institutional performance and benchmarks for each skill set. Because the ACRL standards were so widely used already, we also reported institutional performance and benchmarks by ACRL standard.

For the research phase of the project, we used twelve skill sets. Although this number allowed us to measure student performance of very specific skills, we found that in some cases, only a few ACRL outcomes or objectives composed a skill set. As a result, performance within that skill set was measured with only a few items, which had a detrimental effect on the reliability of the skill set. For the production phase of the project, we have settled on eight skill sets, collapsing more specific skill sets into larger, more reliably measured skill sets. For example, the original SAILS skill sets entitled "Selecting Search Terms," "Constructing

the Search,” and “Evaluating and Revising Search Results” are combined into one new skill set simply entitled “Searching.” See Figure 2 for a list of the original and current SAILS skill sets.

Figure 2: SAILS Skill Sets

Original SAILS Skill Sets

Developing a Research Strategy
Scholarly Communication/Structure of Disciplines
Identifying and Distinguishing Among Types of Sources
Selecting Finding Tools
Selecting Search Terms
Constructing the Search
Understanding Information Retrieval Systems
Evaluating and Revising Search Results
Retrieving Sources
Evaluating and Selecting Sources
Documenting Sources
Economic, Legal, and Social Issues

Current SAILS Skill Sets

Developing a Research Strategy
Selecting Finding Tools
Searching
Using Finding Tool Features
Retrieving Sources
Evaluating Sources
Documenting Sources
Understanding Economic, Legal, and Social Issues

Item Reliability and Difficulty Level

We analyzed the reliability of the test items using Winsteps and data from a representative sample of responses gathered over the three-year development phase of the project. All reliability estimates were greater than .80.

We also examined the difficulty level of each item. Our goal is to have items that span a large range from very easy to very difficult in order to adequately test a wide range of student abilities. Working with librarians at Kent State University, we had three librarians rate the difficulty level of each item in a skill set using a three-point scale. We compared those ratings with the difficulty estimates provided by the output of data analysis. We ran inter-rater reliability analyses which yielded satisfactory inter-rater reliability scores (ranging from .65 to .80) for most of the skill sets. We have taken steps to increase the inter-rater reliability for the skill sets that were not satisfactory. These steps include identifying and eliminating items that do not contribute meaningful information to the test and re-configuring the skill sets from the original

twelve into the current eight. Additional analysis of the impact of these changes is planned.

External Validation

To determine whether the SAILS tests correlates to other similar measures, we compared SAILS results with two external instruments. We gathered SAT/ACT scores for participating students and determined that groups of students who scored higher on the SAT/ACT also scored higher on SAILS, which is what we would expect. We also compared student performance on the SAILS test with performance on the Information Literacy Test (ILT) developed at James Madison University. The ILT has established reliability and validity and is very similar to the SAILS test. A preliminary analysis of the scores of students taking both tests has found a medium correlation between the two, which may be explained due to differences in the tests and the test environment in which each student was asked to complete both tests in one session.

We also conducted performance testing in

which students performed tasks based on the ACRL objectives and then answered the SAILS items for those objectives. We were looking for consistency and achieved it; however, the tasks and SAILS items proved too easy for our sample, so this process was inconclusive.

Current Status of the Test

The current item bank consists of 179 active items spanning eight skill sets, plus a few dozen items in field test status. There are two versions of the test: "American English" is for use in institutions in the United States; "Canadian English" is for use in Canadian schools. Several colleagues at Canadian institutions took the original test items and turned them into items suitable for Canadian English-speaking students. These changes ranged from modifications in spelling to altering historical and political references. We owe a debt of gratitude to these colleagues for their work.

Test Administration System and Reports

A large component of the project has been to develop a Web-based system that facilitates the test setup and administration process. The only technical requirement is access to a current Web browser. The system generates test-taker identifiers that students use to log in to the Web site and take the test. Alternatively, a test administrator can choose to use a paper version of the test and order customized scan form answer sheets.

The setup and test administration is self service and fairly simple. A librarian can register with the system, start a test administration, and create an institutional profile. We have added some options to make the test experience more meaningful not only to each school's test administrator, but to students as well. This includes greater customizability, such as allowing the test administrator to use her own labels for class standing and major, and the ability to ask two customizable questions, which allows the librarian to compare performance of groups other than by class standing or major. For instance, a librarian may decide to compare students in one section of a class with another. Once testing is complete, the test administrator can make payment, which is based on the actual number of students who finished the test.

There are two testing sessions every academic year. At the end of each session (December or May), each school that completed testing will become part

of the benchmark. Data are analyzed and reports generated, which test administrators download as PDFs.

For each test administration, an institution receives a report that shows the performance of groups of students on four of the five ACRL standards and on eight Project SAILS skill sets. Internal benchmarking includes comparison of performance according to class standing, major, and other factors selected by the test administrator. External benchmarking includes comparisons of one school's performance with all other schools, with schools of the same type (e.g., community colleges), and with a self-selected consortium. There is no reporting of individual student scores.

Conclusion

Beginning with the first presentation about Project SAILS in 2001 and continuing through today, we have received overwhelming support and encouragement from institutions and librarians around the world. More than eighty schools participated in the development phase by paying a fee and giving the SAILS test to their students. Nearly fifty additional schools and school systems—including institutions in Canada, Mexico, France, Australia, and the Netherlands—have expressed interest in participating. SAILS test items have been translated into French and Dutch.

For many schools, participation in Project SAILS is an opportunity to help create a strong, useful test of information literacy skills. Many libraries have used the testing process as a way to create and foster collaborations with faculty and administrators on campus. Some librarians have used the information from their reports to target instructional goals and create collaborations within and among institutions. Regional accreditation expectations for assessment were addressed in part by some schools.

Project SAILS is an example of libraries working collaboratively to create useful standardized tools to benefit the larger library community. The tremendous response to Project SAILS signals that librarians and administrators are looking for tools to help them determine the effectiveness of their information literacy programs. Information gained from participating in SAILS can help librarians and administrators answer questions about the connection between information literacy and student success, about the role of the library in teaching information literacy, and about the value

that libraries bring to the higher education endeavor.

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Endnote

1. Association of College and Research Libraries, "Information Literacy Competency Standards for Higher Education," January 18, 2000, <http://www.ala.org/acrl/ilcomstan.html>.

Data Policy Action: The Continuous Improvement Cycle—Cases from ARL and Carnegie MA I Libraries

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Abstract

This paper jointly reports two related research projects which focus on the impact of assessment on library management decision-making in ARL and Carnegie MA I Libraries. In 2002, Beck examined the impact of assessment on decision making in nine public ARL Libraries in the United States and Canada. In 2004 and 2005 Dole, Hurych and Liebst replicated Beck's research methodology in nine Carnegie MA I Libraries. University library directors and "Cabinet level" administrators were asked the same set of questions. At the conclusion of each session, two brief surveys were administered to subjects. The paper will compare the results of the interviews and surveys in the two different types of libraries.

Introduction & Background

This paper jointly reports two related research projects that focus on the impact of assessment on library management decision-making in Association of Research Libraries (ARL) and Carnegie MA I libraries.¹ In 2002, Beck² examined the impact of assessment on decision making in public ARL libraries in the United States and Canada. In 2004-2005, Dole, Hurych and Liebst³ replicated Beck's research methodology in Carnegie MA I libraries.

The ARL study sample consisted of nine Association of Research Libraries' public universities in the United States and Canada, selected primarily because of their involvement in assessment activities. Sixty librarians participated in the ARL study. The Carnegie MA I study sample consisted of nine Carnegie MA I libraries engaged in assessment activities. Thirty-nine librarians participated in this study.

The goal of Beck's original 2002 research was to investigate and understand how and whether librarians were using assessment data in their

decision making processes. The goal of the 2004-2005 research was to learn if Beck's method and instruments could be used in other types of academic libraries (such as Carnegie MA I libraries) and if her conclusion that assessment affects decision-making in ARL libraries was also true in academic libraries of other types and sizes. The research focused on these questions:

- Do librarians use the data they collect?
- Do librarians make data driven decisions?
- Do data driven decisions make a difference?
- What other factors inform decision-making?

Chief library officers (deans, directors, or university librarians), referred to hereafter as directors, from each institution were individually interviewed concerning the impact of assessment on decision-making in their organizations. Senior administrators (assistant directors, associate university librarians, department heads) referred hereafter to as administrators, participated in focus group interviews regarding the use of assessment data in their areas of responsibility.

Variables investigated include: university-wide accountability, governance issues, institutional assessment goals, integration of assessment activities into the planning process, assessment costs, time spent on assessment activities, assessment impact on decisions, data driven decisions, assessment impact on customer needs, change implementation, barriers to change, technological impact on the assessment process and the need for new data measures.

At the conclusion of each session, two surveys were administered to subjects. The first survey assessed each individual's beliefs regarding his/her institution's culture of assessment using Amos Lakos, Betsy Wilson and Shelly Phipps' "Do You Have a Culture of Assessment?" instrument.⁴ The second survey used Beck's Factors in Decision

Making instrument.⁵ This paper will examine and compare those survey results.

Surveys Administered at LRRT Program, ALA 2006

Beck and Dole administered the same two surveys as part of a presentation to the audience of the program "Do Data Count?," sponsored by the American Library Association's (ALA) Library Research Roundtable at the ALA conference in New Orleans in June 2006.⁶ This paper will include a preliminary analysis of the participating academic directors and administrators survey responses and compare these findings with those of the first two studies. Thirty-two academic librarians completed these surveys.⁷ These librarians are referred to as ALA directors and administrators, in the discussion that follows.

ARL Libraries

The interviews reveal that ARL librarians evaluate use, satisfaction, and users' perceptions of the library's value to their work. They use various assessment techniques to make informed decisions. These include an array of user surveys, focus groups, and assessment systems such as the Balanced Scorecard. They also use process improvement, economic and ARL statistical data. One library asks users to rank library priorities for services, collections, facilities, and equipment.

Carnegie MA I Libraries

MA I libraries also use a variety of assessment techniques. These include user satisfaction surveys and, in one case, employee "dissatisfaction" surveys (the director holds exit interviews with all student employees). This library had a "sea change" several years ago and the librarians devised a new way to do assessment. They tried to establish a central focus in assessment and use data already regularly collected. The assessment committee has tried to encourage librarians to conduct routine assessment of users' reactions to library service and has built a "little matrix" for this. They also use ACRL and campus supplied information.

Data Driven Decisions

In both ARL and MA I libraries, data were used to change library hours, justify building or renovation needs, create new services, improve existing services, and increase collections budgets. Data were also used to close a library branch, eliminate

staff positions and identify staffing trends and needs. ARL directors indicated the most valuable data for planning included: information use patterns, electronic services use, disciplinary technology readiness, user distribution by discipline, and gate and occupancy counts by time of day. The MA I directors found the following data most useful: collection use (especially of online resources) and user satisfaction with services.

ARL administrators use data to plan, establish priorities, and set the library's future direction. When decision-making data are not available, both ARL and MA I librarians are guided by topics such as benefits, economics, emotions, experience, institutional goals, professional goals, qualitative data, strategic directions, technology, time, and values.

The degree to which assessment influences decisions in ARL and MA I libraries varies from library to library and within individual libraries. Readiness to incorporate assessment data into decision-making processes appears to be a function of leadership, need for information, interest in assessment as a decision-making tool, organizational culture, as well as institutional pressures. When data are used to make decisions, administrators believe that this informed decision-making enhances the reputation of the library and lends integrity and credibility to its actions and its leaders.

Future Needs for Assessment in Libraries

ARL and MA I library directors believe the most important thing they need to do today is learn how to measure the impact of libraries. They want to know how to demonstrate that libraries make a difference to users and to parent institutions. Librarians need to develop the ability to measure the libraries' impact on higher education and to incorporate assessment data into decision-making processes. How do libraries affect faculty research, teaching and student learning? One library director expressed the dilemma like this: "How do we figure out and describe what we are doing in the building that's important?"

Survey Results

Factors in Decision Making

The Factors in Decision Making (FID) survey asks respondents to rank the importance (on a one-to-six scale) of each factor used in the decision making process in their libraries. The ten factors include: culture; technological feasibility; cost/financial

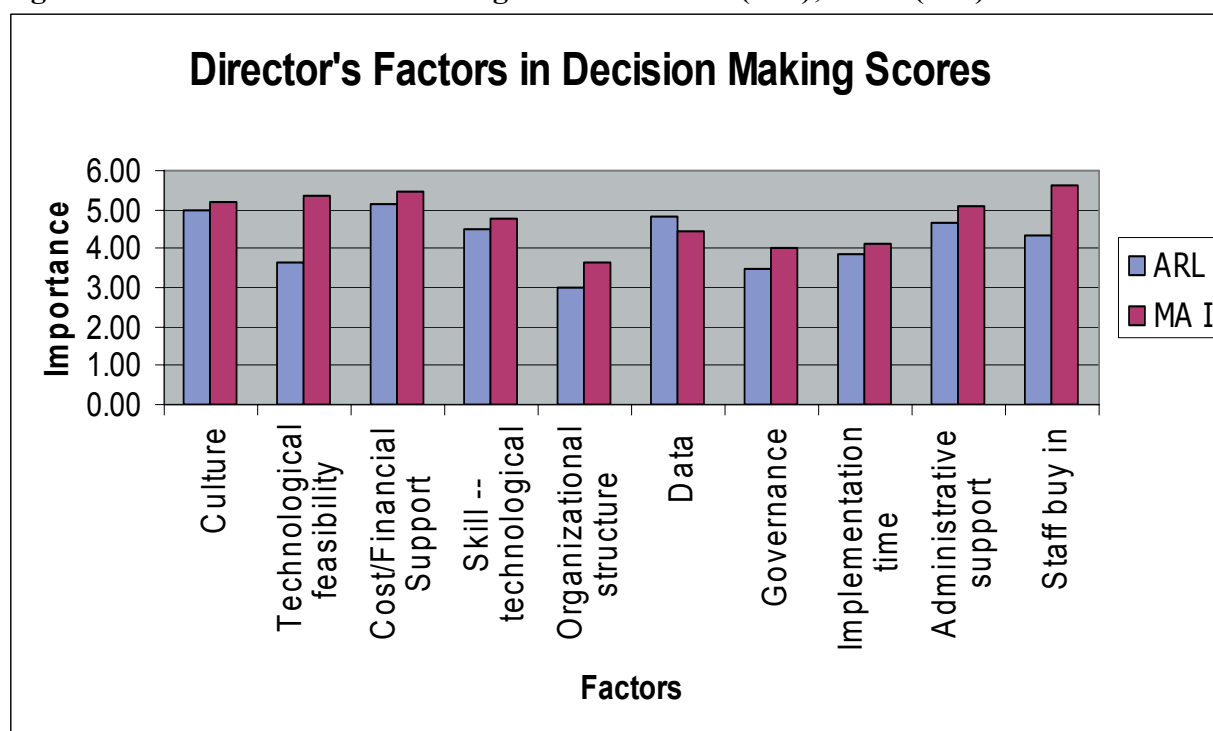
support; skill-technological; organizational structure; data; governance; implementation; time; administrative support; and staff buy-in.

Factors in Decision Making: Directors

There is a marked difference among the directors in the study. Cost is the common factor that is most important to these two groups. The three most important decision making factors for ARL

directors are cost, culture, and data. For their MA I colleagues, staff buy-in, cost and technological feasibility are the three most important factors. The MA I directors scored all factors higher than their ARL colleagues, with the exception of data. For both groups, factors relating to governance and organizational structure are the least important decision making factors. See Figure 1.

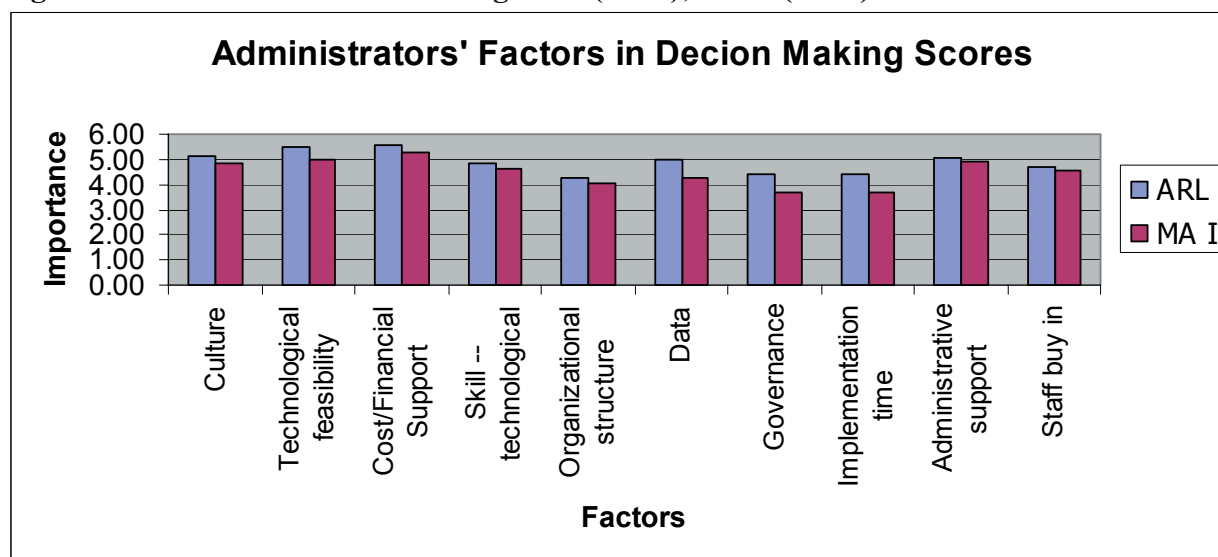
Figure 1. Factors in Decision Making: Directors ARL (n=6); MA I (n=9)



Factors in Decision Making: Administrators

Administrators in both types of libraries cite cost/financial support and technological feasibility among the most important decision making factors. ARL administrators viewed culture as important,

while the Carnegie MA I administrators valued administrative support. See Figure 2 for this comparison. ARL administrators indicated data was more important to them in making decisions.

Figure 2. Factors in Decision Making ARL (n=47); MA I (n=30)

Factors in Decision Making: By Institution Type

When comparing similarities among directors and administrators within the same institution, the four most important factors in ARL libraries are cost/financial support, culture, data and administrative support. See Figure 3. ARL directors valued skill- technological more than their administrators who were more concerned with technological feasibility. There was greater variability in the ARL libraries between the two groups than in the Carnegie MA I libraries.

In the Carnegie MA I libraries, both groups ranked cost/financial support and technological feasibility in the top three decision factors. Directors considered staff buy-in as important, while their administrators valued administrative support. The difference in rankings appears to be appropriate, in

view of the fact that directors need staff buy-in to accomplish their goals and administrators need administrative support from their directors to accomplish their goals. Figure 3 shows the differences between these two groups.

Factors in Decision Making: ARL & MA I

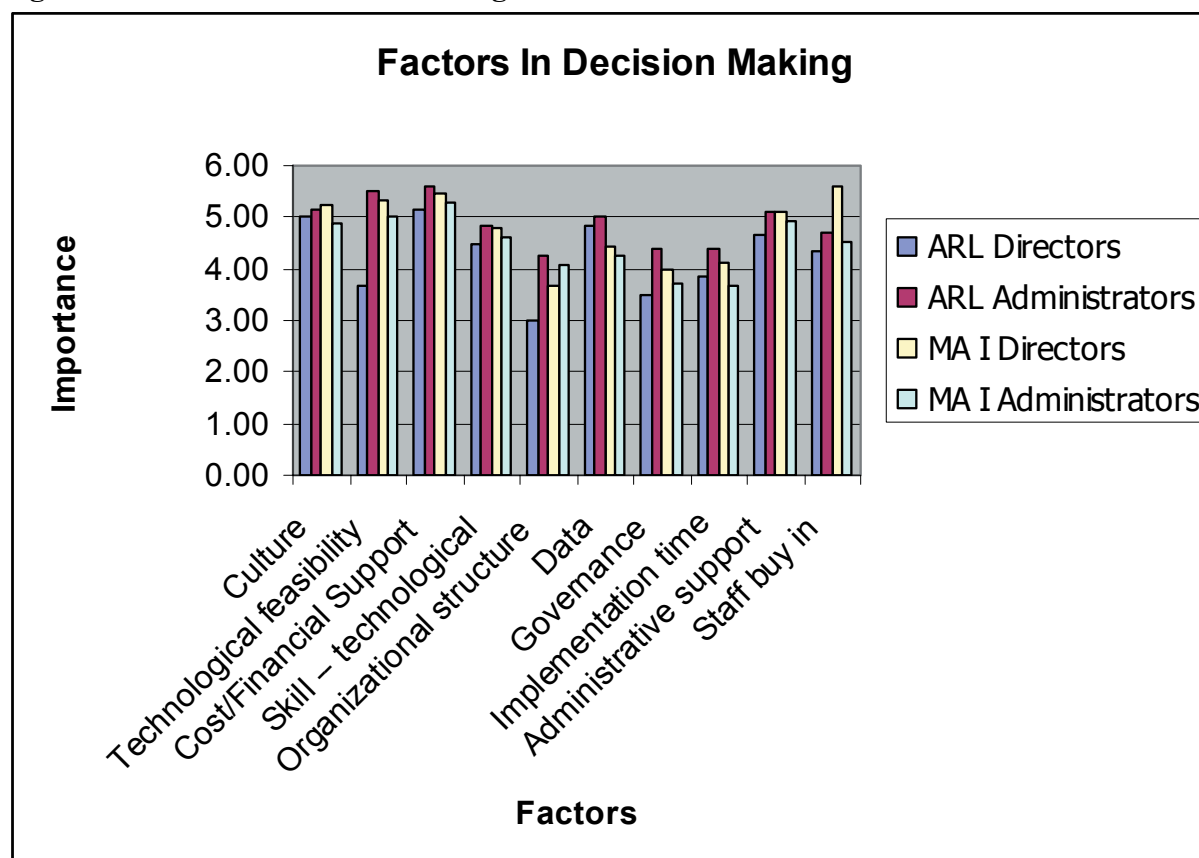
Cost/Financial Support is considered among the most important decision factors by all groups. All four groups assigned similar rankings to the Factors in Decision Making for culture, cost/financial support, skill, and administrative support factors. Similarly, all groups scored governance, implementation time, and organizational structure as less important factors. The greatest variations are in technological feasibility and staff buy-in, as seen in Figure 3.

Figure 3. Ranked Factors in Decision Making

Rank	ARL Libraries		Carnegie MA I Libraries	
	Directors	Administrators	Directors	Administrators
1	Cost/Financial Support	Cost/Financial Support	Staff buy-in	Cost/Financial Support
2	Culture	Technological feasibility	Cost/Financial Support	Technological feasibility
3	Data	Culture	Technological feasibility	Administrative support
4	Administrative support	Administrative support	Culture	Culture
5	Skill -- technological	Data	Administrative support	Skill -- technological
6	Staff buy-in	Skill -- technological	Skill -- technological	Staff buy-in
7	Implementation time	Staff buy-in	Data	Data
8	Technological feasibility	Governance	Implementation time	Organizational structure
9	Governance	Implementation time	Governance	Governance
10	Organizational structure	Organizational structure	Organizational structure	Implementation time

ARL directors scored the technological feasibility factor significantly lower than all the other three groups. The MA I directors scored staff buy-in much higher than the other groups. The authors wonder if this relates to the smaller size of the MA I institution where directors are closer to staff and where smaller staff size might have a

significantly larger impact on the success or failure of implementation of decisions. However, both ARL and MA I directors found staff buy-in more important than their administrators did. See Figure 4 for a comparison of all groups on this survey instrument.

Figure 4. Factors in Decision Making: Directors and Administrators**Factors in Decision Making: ALA Librarians**

Thirty-two academic librarians completed the Factors in Decision Making and Culture of Assessment surveys at the Library Research Roundtable session at the 2006 ALA Annual Conference. Of these, eight self-identified as directors and twenty-four as administrators. When comparing the similarities among the ALA administrators and directors, they scored culture, cost/financial support and administrative support

high. Data and culture were ranked highest by the ALA directors along with staff buy-in. This is the only group that ranked data as their highest decision making factor. The administrators were concerned with the technological aspects of decision making such as skills and feasibility. They both ranked governance, organizational structure and implementation time as less important decision factors just as the ARL and MA I librarians did. See Figure 5.

Figure 5. Ranked Factors in Decision Making: ALA Directors and Administrators

	ALA Factors in Decision Making	
Rank	Directors	Administrators
1	Data (tie)	Cost/Financial Support
2	Culture (tie)	Technological feasibility
3	Staff buy-in	Culture
4	Cost/Financial Support	Administrative support
5	Administrative support	Skill—technological
6	Skill—technological	Data
7	Governance	Organizational structure
8	Organizational structure	Governance
9	Technological feasibility	Staff buy-in
10	Implementation time	Implementation time

A comparison of the ALA librarians' responses to Factors in Decision Making (See Figures 6 and 7) reveals greater similarity among the administrators' responses to FID than directors'. The ALA directors closely resemble their ARL and MA I counterparts in the ranking of culture and implementation time. Their rankings were lower than the other two groups for the following factors: cost/financial support, skill/technological and administrative support. They gave higher rankings to

organizational structure and data than their ARL and MA I colleagues did.

For the most part, the ALA administrators' FID rankings resembled those of the ARL and MA I administrators. The ALA group gave a much lower score to staff buy-in and a slightly lower score to skill/technological and administrative support. The ALA administrators' data score was the lowest among all the groups.

Figure 6. Directors' Factors in Decision Making Scores ARL (n=6); Carnegie MA I (n=9); ALA (n=8)

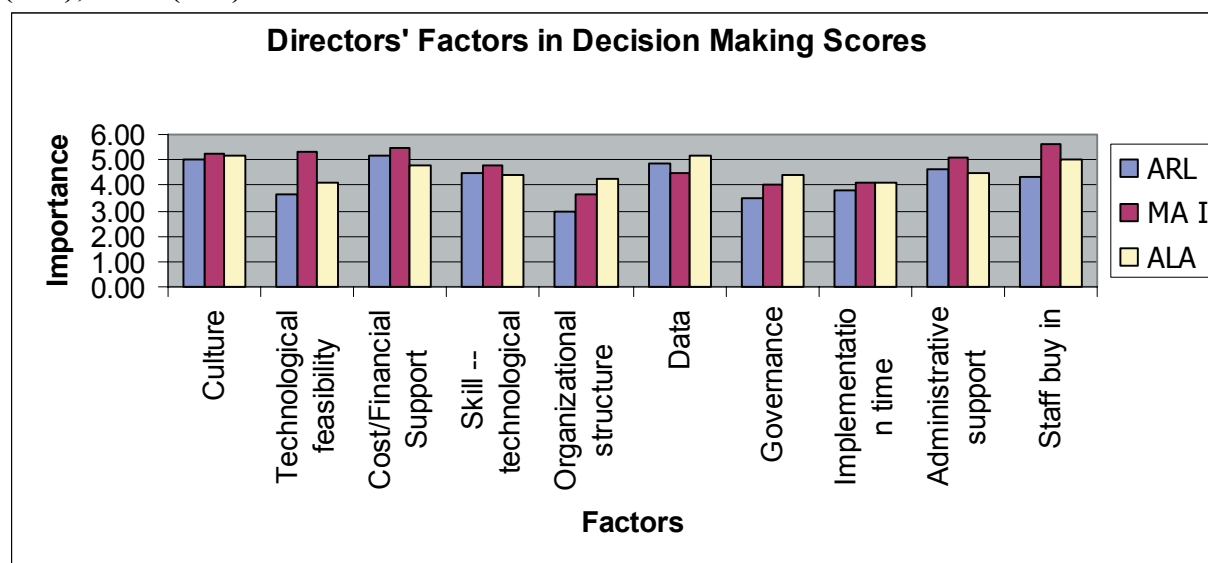
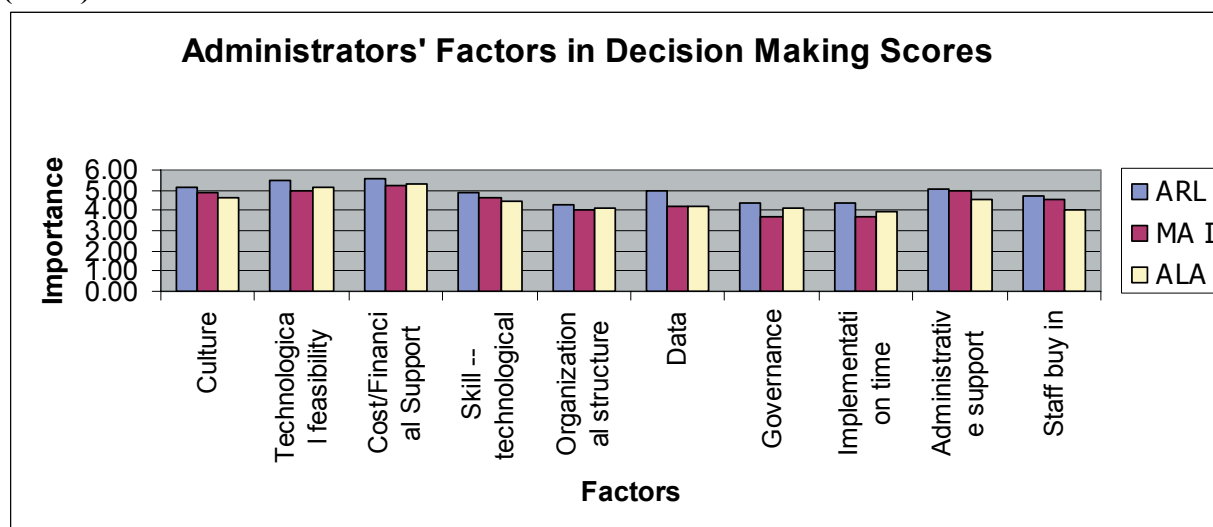


Figure 7. Administrators' Factors in Decision Making ARL (n=47); MA I (n=30); ALA (n=24)



Culture of Assessment

Betsy Wilson, University of Washington, and Amos Lakos, currently at the University of California Los Angeles, initially developed the Culture of Assessment (COA) survey instrument in 1998.⁸ Beck used the survey modified by Shelly Phipps, University of Arizona, in 2002. Dole used the COA survey revised by Julia Blixrud from the Association of Research Libraries

in 2003.

The instrument employs this premise: "If your organization has developed a culture of assessment it will have 'built in mechanisms' that will embed and reinforce a focus on customers, continuous assessment, and the use of measurement for planning and decision-making." The instrument provides a list of mechanisms that are considered evidence of an "operating" culture of assessment.

Respondents are asked to evaluate (on a one to six scale) if the culture of their library is weak or strong in each mechanism. The first six mechanisms concern Personnel Issues and the last seven mechanisms, Support Systems. The list of thirteen mechanisms is below.

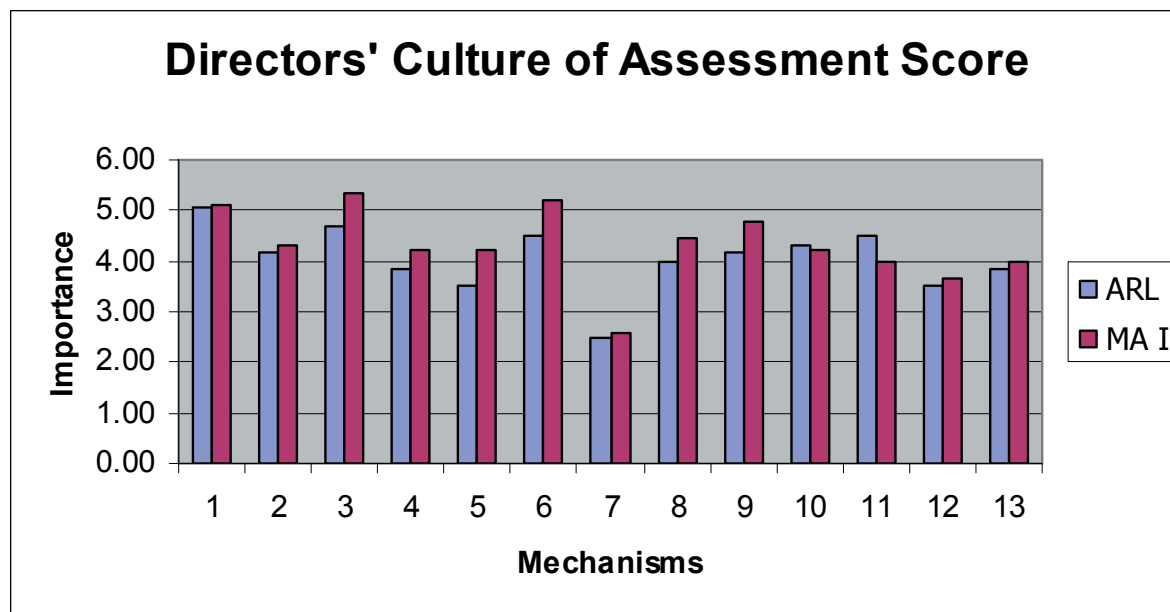
Culture of Assessment Mechanisms

1. The Organization's mission, planning and policies are focused externally on supporting the customer's needs for access to information.
2. How performance will be measured is included in organizational planning documents such as the strategic plans.
3. Leadership commits to and financially supports assessment activities.
4. Staff recognizes the value of assessment and engages in assessment as part of their regular assignments.
5. Individual and organizational responsibility for assessment is addressed explicitly—in job descriptions or is otherwise communicated formally.
6. Relevant data and user feedback is routinely collected, analyzed, and used to set priorities, allocate resources and make decisions.
7. Assessment activities are supported by a Management Information System or Decision Support System.
8. Services, programs and products are evaluated for quality and impact (outcome).
9. Staff are supported to continuously improve their capability to serve customers and are rewarded for this.
10. Staff are rewarded for work that demonstrates improved service quality or better outcomes for customers.
11. On-going staff development in how to do effective assessment and measurement of results is provided and supported.
12. Units within the Library have defined their critical processes and established measures of success.
13. Individual staff have specific and measurable goals and progress toward them is reviewed periodically with others in the unit or their supervisor.

Culture of Assessment: Directors

As shown in Figure 8, Culture of Assessment scores are very similar between the two groups. ARL directors' aggregate mean score on the thirteen

mechanisms is 4.04. The MA I directors' mean score is 4.32. The Carnegie MA I directors' aggregate score may suggest that their culture of assessment is stronger than that of ARL directors.

Figure 8. Culture of Assessment: Directors ARL (n=6); MA I (n=9)

Mechanism 7: *Assessment activities are supported by a Management Information System or Decision Support System* scored lowest among all mechanisms by both groups. This undoubtedly reflects the fact that there are only a handful of libraries that do have formal MIS (Management Information Systems) departments. Some libraries may have offices with similar functions. Institutional Research or Assessment Offices may provide similar functions at some institutions. In this context we interpret Decision Support Systems

to be used for creating and generating information to support decisions.

Figure 9 shows the ranked list of Culture of Assessment Mechanisms for directors in ARL and MA I libraries. Although ranked differently, the top three mechanisms are the same. The differences between the two groups on ranks 4 and 5 may be significant. For both groups they are the most important support mechanisms, but are different ones. The authors question if the nature of the difference reflects size or type of institution.

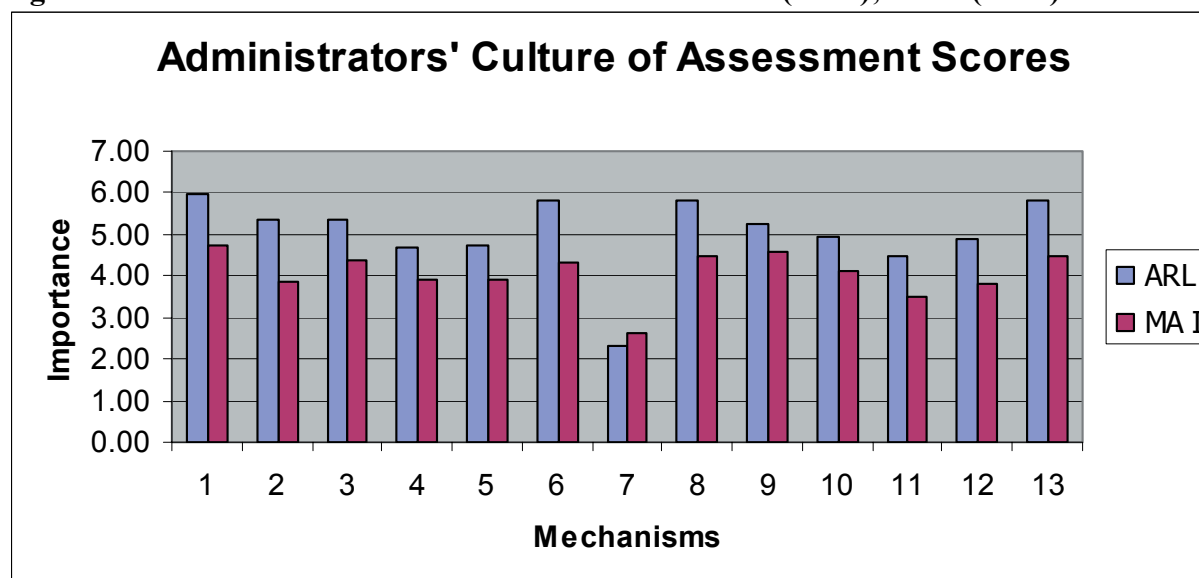
Figure 9. Ranked Culture of Assessment Scores: Directors

Culture of Assessment Top Mechanisms	
ARL Directors	MA I Directors
1. The Organization's mission, planning & policies are focused externally on supporting the customer's needs for access to information (M1)	1. Leadership commits to and financially supports assessment activities (M3)
2. Leadership commits to and financially supports assessment activities (M3)	2. Relevant data and user feedback is routinely collected, analyzed, and used to set priorities, allocate resources and make decisions. (M6)
3. Relevant data and user feedback is routinely collected, analyzed, and used to set priorities, allocate resources and make decisions. (M6)	3. The Organization's mission, planning & policies are focused externally on supporting the customer's needs for access to information (M1)
4. On-going staff development in how to do effective assessment and measurement of results is provided and supported.(M11)	4. Staff are supported to continuously improve their capability to serve customers and are rewarded for this. (M9)
5. Staff are rewarded for work that demonstrates improved service quality or better outcomes for customers (M10)	5. Services, programs and products are evaluated for quality and impact (outcome) (M8)

Culture of Assessment: Administrators

ARL administrators' aggregate mean score on the COA mechanisms is 5.03, the highest mean score among both directors and administrators. The MA I administrator score is 4.05. The ARL score suggests

that the administrators' COA is stronger than their MA I colleagues. The ARL administrators have higher scores on all mechanisms except *M7*. See Figure 10.

Figure 10. Culture of Assessment: Administrators ARL (n=47); MA I (n=30)

Both groups of administrators share two of five strongest ranked mechanism scores on M1, and M8 as seen in Figure 11. They both also ranked M1 highest: *The Organization's mission, planning & policies are focused externally on supporting the customer's needs for access to information*. MA I administrators included M9 and M3 in their top

five. ARL administrators included M5 and M6. In general, support mechanisms receive higher scores from administrators than from directors. Perhaps the difference is a function of the staff size or the distance within the organizational structure between the administrators and the non-professional staff.

Figure 11. Ranked Culture of Assessment Scores: Administrators

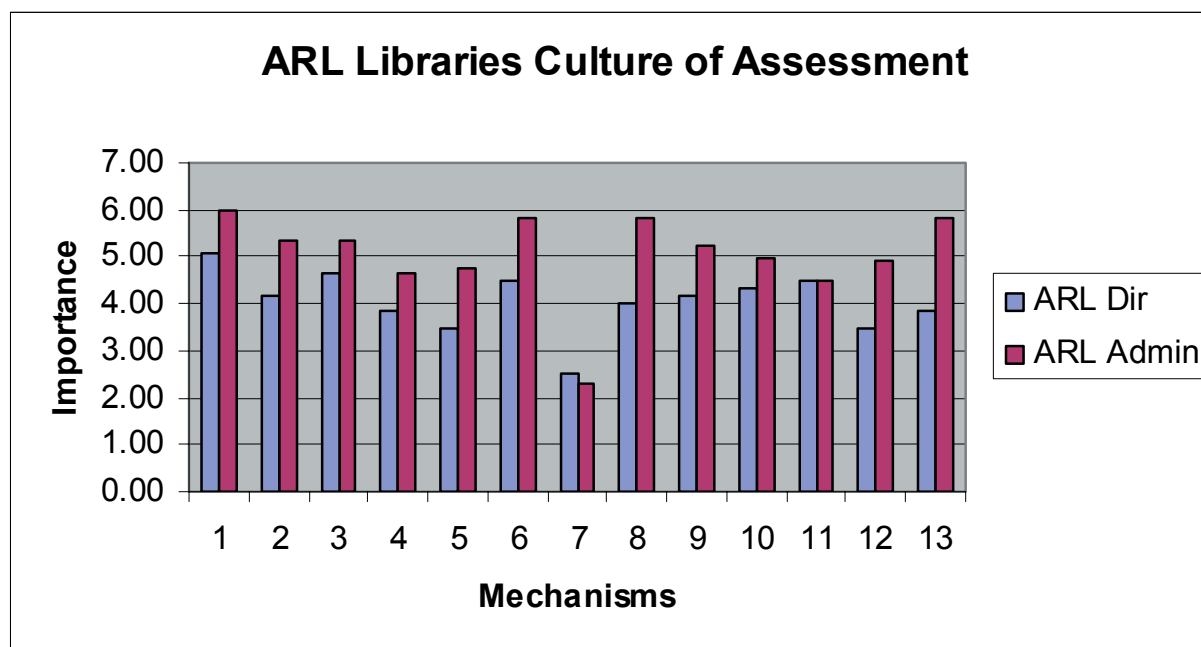
Culture of Assessment Top Mechanisms	
ARL Administrators	MA I Administrators
1. The Organization's mission, planning & policies are focused externally on supporting the customer's needs for access to information (M1)	1. The Organization's mission, planning & policies are focused externally on supporting the customer's needs for access to information (M1)
2. Relevant data and user feedback is routinely collected, analyzed, and used to set priorities, allocate resources and make decisions (M6)	2. Staff are supported to continuously improve their capability to serve customers and are rewarded for this (M9)
3. Services, programs and products are evaluated for quality and impact (outcome) (M8)	3. Individual staff have specific and measurable goals and progress toward them is reviewed periodically with others in the unit or their supervisor (M13)
4. Individual and organizational responsibility for assessment is addressed explicitly-- in job descriptions or is otherwise communicated formally (M5)	4. Services, programs and products are evaluated for quality and impact (outcome) (M8)
5. How performance will be measured is included in organizational planning documents such as the strategic plans (M2)	5. Leadership commits to and financially supports assessment activities (M3)

Culture of Assessment: ARL Libraries

The ARL administrators' aggregate score (5.03) reveals that their culture of assessment is much stronger than that of the ARL directors (4.04). A comparison of the similarities between the two groups shows that both score M1 the strongest: see Figure 12 for the comparison.

In general, support mechanisms are more important to the administrators than to the

directors. ARL administrators gave higher scores to areas related to their own job responsibilities such as evaluation of services and staff and performance measurement. The directors gave higher scores to areas related to their responsibility and authority such as support of assessment activities and delivery of staff rewards.

Figure 12. ARL COA Scores: Directors: (n=6); Administrators (n=47)**Culture of Assessment: Carnegie MA I Libraries**

There is little variation in Culture of Assessment scores between the directors and administrators at the Carnegie MA I Libraries, as seen in Figure 13.

The directors gave higher scores to most mechanisms and their aggregate mean score shows they have a stronger culture of assessment than their administrators do. Four of the top five strongest scores (M1, M3, M8, and M9) are shared

by both groups. The groups differed in their top five rank with these two mechanisms: The directors scored strongest on *the use of relevant data to make decisions* (M6) while the administrators included M13 in their top five: *Individual staff have specific and measurable goals and progress toward them is reviewed periodically with others in the unit or their supervisor*. This ranking possibly reflects their individual functional responsibilities.

Figure 13. Carnegie MA I Culture of Assessment Scores: Directors n=9; Administrators n=30

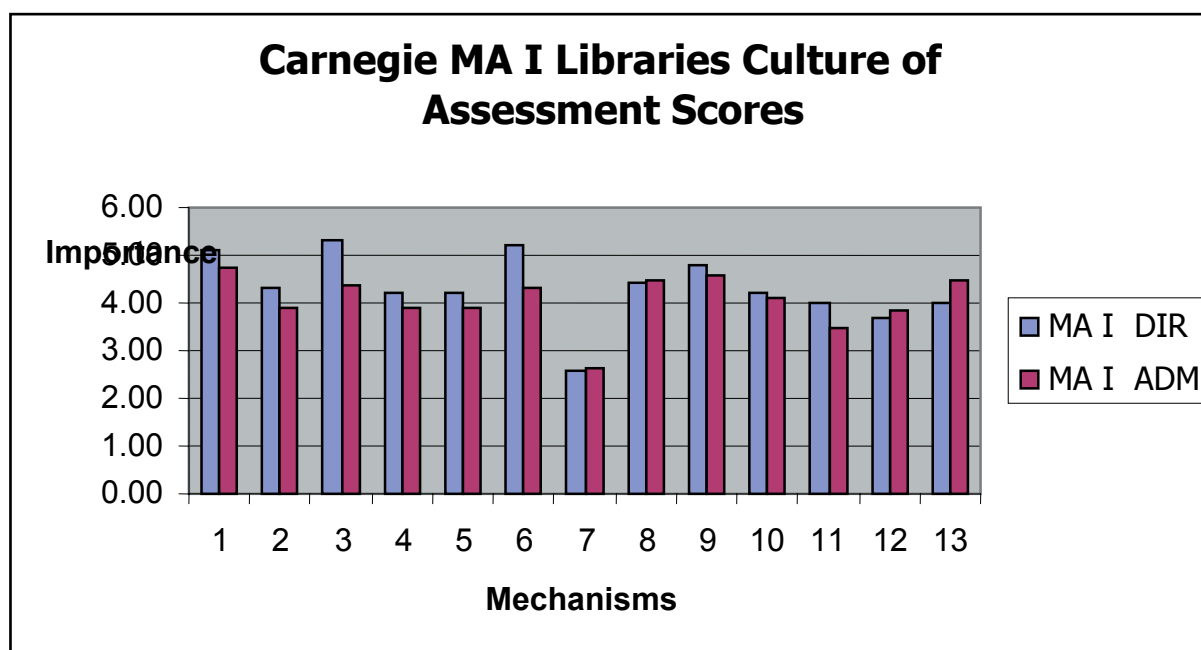
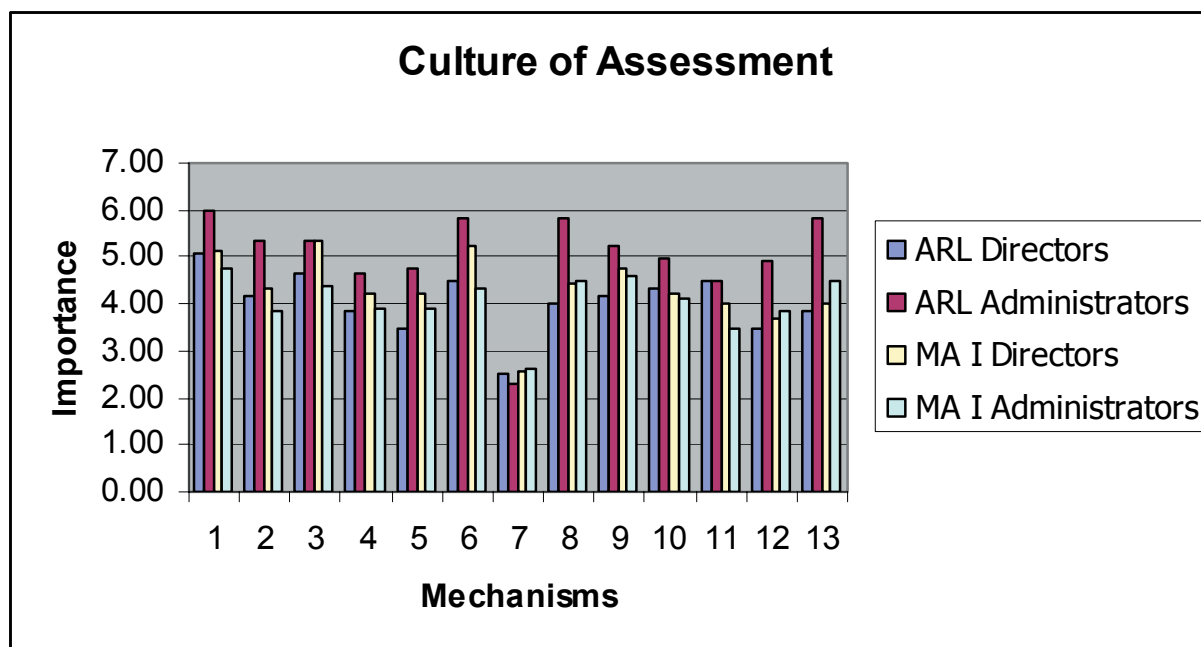


Figure 14. Culture of Assessment: Directors and Administrators

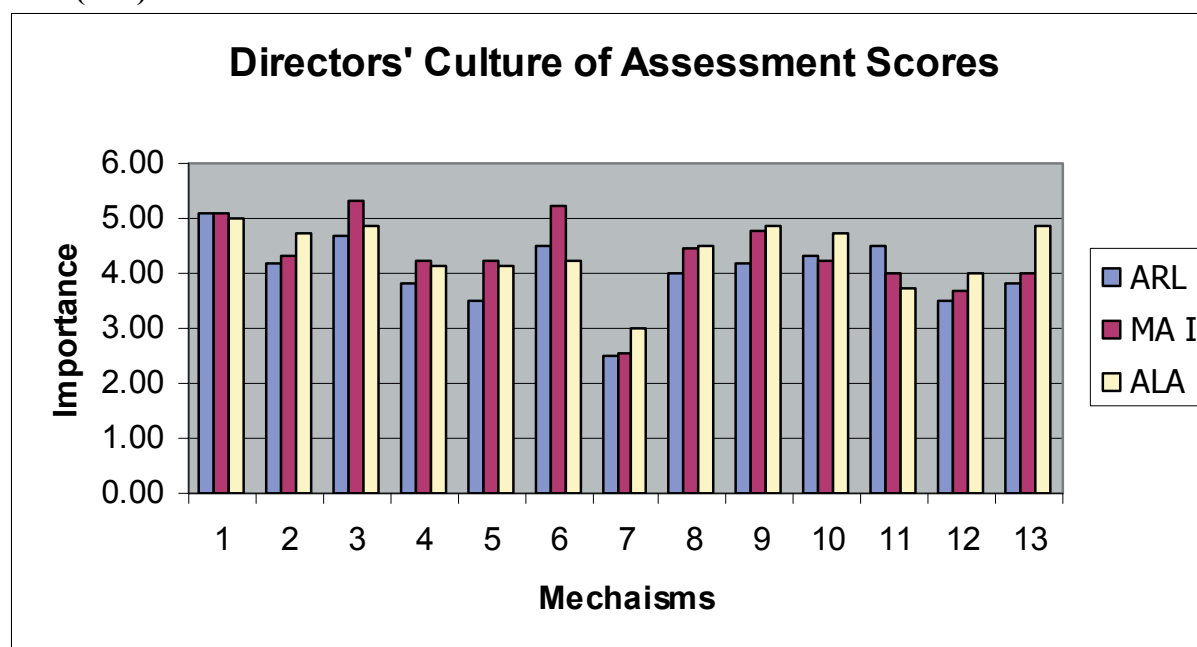


Culture of Assessment: ALA Libraries

Figure 15. ALA COA Top Five Mechanisms

ALA Top Five Culture of Assessment Mechanisms	
Directors	Administrators
1. The Organization's mission, planning & policies are focused externally on supporting the customer's needs for access to information (M1)	1. The Organization's mission, planning & policies are focused externally on supporting the customer's needs for access to information (M1)
2. Leadership commits to and financially supports assessment activities (M3)	2. Leadership commits to and financially supports assessment activities (M3)
3. Staff are supported to continuously improve their capability to serve customers and are rewarded for this (M9)	3. Relevant Data and user feedback is routinely collected, analyzed, and used to set priorities, allocate resources and make decisions (M6)
4. Individual staff have specific and measurable goals and progress toward them is reviewed periodically with others in the unit or their supervisor (M13)	4. How performance will be measured is included in organizational planning documents such as the strategic plans (M2)
5. How performance will be measured is included in organizational planning documents such as the strategic plans (M2)	5. Staff recognizes the value of assessment and engage in assessment as part of their regular assignment.(M4)

Figure 16. Directors' Culture of Assessment Scores: ARL (n=6); Carnegie MA I (n=9); ALA (n=8)

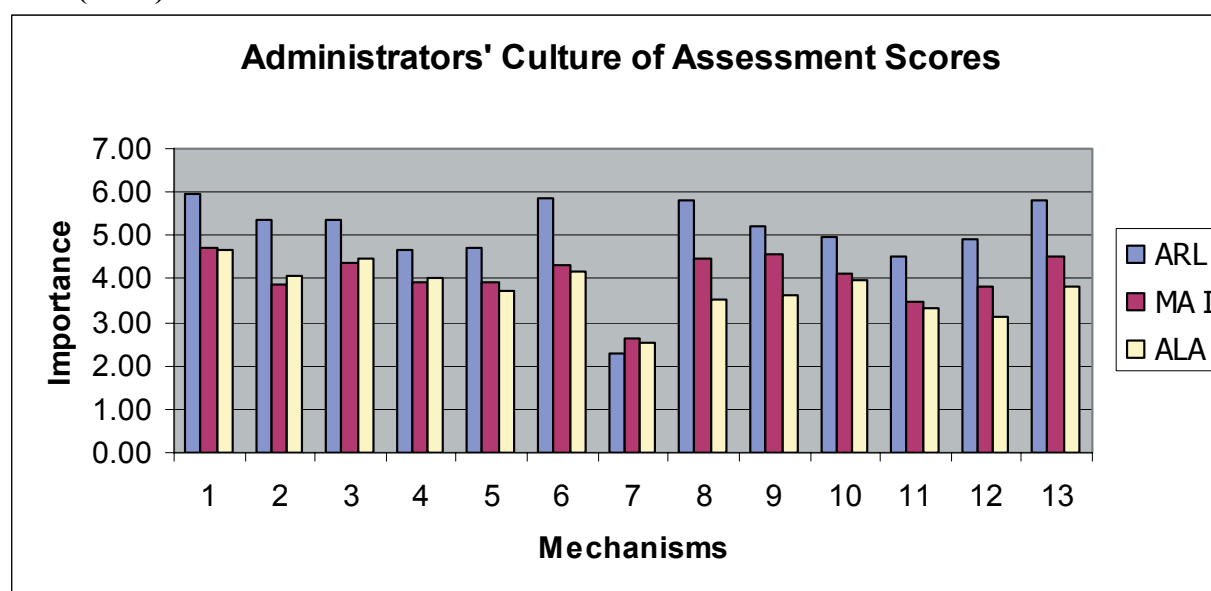


A Culture of Assessment: Directors: All Libraries

There is little variation among the three different library groups on this instrument. A comparison of the three groups' aggregate scores shows that the ALA library directors have the highest aggregate score 4.38, (MA I 4.32 and ARL 4.04). The M1 mechanism continues to be the most consistent score among all three-library types. Obviously most

libraries consider it their mission to support customer's needs for information. The ALA libraries' score on M13 is higher than the others, which may reflect the diversity of library types included in this sample. Again, M7 is the weakest score. See Figure 16 for a comparison of the Directors' Culture of Assessment scores.

Figure 17. Administrators' Culture of Assessment Scores ARL (n=47); MA I (n=30); ALA (n=24)



The ALA directors' scores were very similar to the ARL and MA I directors for only one mechanism: M1: *The Organization's mission, planning & policies are focused externally on supporting the customer's needs for access to information*. They ranked the following mechanisms higher than the ARL and MA I directors did: M2, M7, M10 and M12 as shown in Figure 16. They ranked M13, *Individual staff have specific and measurable goals and progress toward them is reviewed periodically with others in the unit or their supervisor*, significantly higher than the others did.

Compared to the ARL and MA I directors, the ALA group gave lower rankings to the following mechanisms associated with assessment activities, training for assessment and rewarding staff for engagement in assessment, (M6, M11, M4 and M5).

However, ALA directors had the highest COA mean score among all three groups. (4.38). Interestingly, the ALA directors also ranked *Data in the FID instrument as one of the most important decision making factors*.

The ALA administrators' responses resemble those of MA I colleagues more than those of the ARL group. Especially similar are the scores for the following mechanisms: M1, M3, M4, M6, and M11. See Figure 17. They gave lower scores to the Support mechanisms: M8, M9, M12, and M13.

Conclusions

This paper reviews and compares the results of the administration of two surveys among three distinct academic library populations with a strong interest in assessment. ARL Librarians first completed the surveys in 2002. In 2004-2005, the surveys were

administered to librarians in Carnegie MA I libraries. The third group differs from the first two groups in that the directors and administrators did not come from the same academic libraries, or even the same type of academic libraries. The third group consisted of librarians from all types of academic libraries including ARL, small state institutions and community colleges. In all, twenty-three academic library directors, and one hundred and one academic library administrators completed these surveys.

The most important observation about these three disparate groups of academic librarians is the similarity in their responses. There are very few differences among the three groups on either instrument.

Factors in Decision Making

The responses to the Factors in Decision Making Survey reveal consistent agreement about the most important factors among three disparate populations. Based on the data, the authors suggest that future empirical and qualitative research studies of decision making in academic libraries should investigate these areas: *Cost/Financial Support, Culture, Technological Feasibility, Data and Administrative Support*.

This data probably illustrates the top/down character of library decision making in contrast to the rhetoric of shared decision-making. Directors make decisions. Administrators implement them. It may also reflect administrators' self image as subordinate managers rather than as administrators.

Culture of Assessment

Again, with the Culture of Assessment instrument, the most obvious conclusion is that there is little variation among the responses of the three different groups. Although the variations are few, they may reveal some interesting insights.

For example, it was interesting to discover librarians' responses differed based on their functional responsibilities. In general, support mechanisms are more important to the administrators than to the directors. ARL administrators gave higher scores to areas related to their responsibilities concerned with performance measurement of both services and staff. Directors gave higher scores to areas related to their responsibility and authority such as support of assessment activities and delivery of staff

rewards.

M1: *The Organization's mission, planning & policies are focused externally on supporting the customer's needs for access to information* has the highest score among all groups. Of course, this mechanism reflects the mission of most academic libraries. The weak scores on Mechanism 7, *Assessment activities are supported by a Management Information System or Decision Support System*, consistently point to the fact that most libraries have not evolved to the point where they develop or depend on MIS Systems. This could be likened to the Holy Grail for assessment aficionados. Another explanation could be that librarians have refined and reduced the number and type of metrics needed for library assessment to those now regularly available from integrated library systems, campus management systems (such as *Banner*) and vendors of electronic information. One interesting question to look at would be "Is this similar to colleges and universities?" Are libraries different in their decision-making processes versus their parent institutions?

The Culture of Assessment Instrument was never intended to be used as a comparative tool. It was designed to be used in workshops that focused on developing a culture of assessment. The survey was administered as a means to introduce participants to mechanisms relating to assessment, and let them reach their own conclusions about the status of assessment at their own institutions.

Martha Kyrillidou, Director, ARL Statistics and Service Quality Programs, encouraged Beck, while an ARL Visiting Program Officer to administer the instrument. Now four years later, Beck and Dole have administered this instrument to over one hundred and fifty librarians in multiple types of libraries. The initial intent was to administer it in ARL Libraries, then Dole took it to MA I Libraries. The authors then administered it at an ALA Conference Program and for the first time, librarians from academic (including community colleges), public, and federal libraries took the survey. This paper includes the preliminary analysis of the academic librarian participants at the ALA Program. The full surveys results have yet to be analyzed.

These are the strongest assessment mechanisms among all three groups. Think about translating this list into your library's goals to begin on a path to developing a Culture of Assessment.

Figure 18. Strongest Culture of Assessment Mechanisms among All Libraries

Strongest Culture of Assessment Mechanisms among All Libraries	
1.	The Organization's mission, planning & policies are focused externally on supporting the customer's needs for access to information (M1)
2.	Leadership commits to and financially supports assessment activities (M3)
3.	How performance will be measured is included in organizational planning documents such as the strategic plans (M2)
4.	Services, programs and products are evaluated for quality and impact (outcome) (M8)
5.	Staff is supported to continuously improve their capability to serve customers and are rewarded for this (M9)

Further Study Needed

The qualitative charter of these studies does not preclude a quantitative approach based on the same or similar instruments. Although the responses of all groups to both survey instruments were remarkably similar, there needs to be more study of the differences and the relationship between the decision-making factors and the culture of assessment. To what degree is data based decision making associated with a culture of assessment?

The study could also be expanded to other types of libraries such as private ARLs, Carnegie Doctoral/Research libraries and public libraries. Beck plans to replicate this study at Private ARL institutions in 2007. The ALA survey responses included staff librarians for the first time; it would be interesting to look at the full realm of responses within a single institution to compare and contrast the different groups.

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Endnotes

1. Carnegie MA I is the Carnegie Classification (Carnegie Foundation for the Advancement of Teaching) for institutions which offer a wide range of baccalaureate programs and are committed to graduate education through the master's degree. They award 40 or more master's degrees annually across three or more disciplines. This was the definition for those institutions at the time this study was conducted. The Carnegie Foundation for the Advancement of Teaching revised its system and issued new classifications in 2006. For more information about the

new Carnegie Classification please see:

<http://www.carnegiefoundation.org/classifications/index.asp> (accessed September 14, 2006).

2. Susan J. Beck, "Making Informed Decisions: the Implications of Assessment," in *Learning to Make a Difference: Proceedings of the Eleventh National Conference of the Association of College and Research Libraries*, Charlotte, North Carolina, April 10-13, 2003 (Chicago: American Library Association, 2003), 52-59. Susan J. Beck, "The Extent and Variety of Data-Informed Decisions at Academic Libraries: An Analysis of Nine Libraries of the Association of Research Libraries in the U. S. A. & Canada" Fifth Northumbria International Conference on Performance Measurement in Libraries and Information Services: Library Measures to Fill the Void: Assessing the Outcomes, Collingwood College, Durham, England, UK, 29 July 2003, ed. Sandra Parker (Bradford, UK: Emerald Group Publishing Limited, 2003), 41-47. Susan J. Beck, "Data-Informed Decision Making" ARL Bimonthly Report 230/231 (October/December 2003): 30.
3. Wanda V. Dole, Jitka M Hurych, Anne Liebst, "Assessment A Core Competency for Library Leaders," *Library Administration & Management* 19, no. 3 (Summer 2005): 125-32.; Wanda V. Dole, Jitka M. Hurych, and Anne Liebst, "Core Competencies for Library Leaders: Is Assessment a Core Competence?" in *Libraries, Globalization and Cooperation: Papers from the International Conference held in Sofia, Bulgaria, 3-5 November 2004* (Sofia: St.

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4. The Culture of Assessment is available online at: <http://personal.anderson.ucla.edu/amos.lakos/assessment/CulAssessToolkit/Culture-of-Assessment-revofiq.pdf> (accessed September 12, 2006).
 5. The survey factors developed by Beck were inspired by DECIMAL project see Shelagh Fisher, Tony Oulton, "Information for Decision Making: the DECIMAL Project" *Library Review* 44, no. 8 (1995):10-19; and Jonathon Wilson, Shelagh Fisher, Sian Lambert, and Tony Oulton, "Decision-Making in Libraries: Decision Research for the Development of Integrated Library Systems," Project: LIB-DECIMAL/4-3012, October 1995, <http://www.mmu.ac.uk/h-ss/dic/research/projects/decimal/urs/contents.htm> (no longer available).
 6. Susan J. Beck, "Do Data Count? How Library Administrators Make Decisions," Library Research Round Table, ALA Annual Conference, New Orleans, June 24, 2006; Wanda V. Dole, "Do Data Count II: The Replication," Library Research Round Table, ALA Annual Conference, New Orleans, June 24, 2006.
 7. While sixty librarians completed the two surveys at the ALA Conference from all types of libraries, this study reports only those responses from academic directors (n=8) and administrators (n=24) who mirrored the original subjects.
 8. Amos Lakos and Shelley Phipps, "Creating a Culture of Assessment: A Catalyst for Organizational Change," *Portal: Libraries and the Academy*, 4, no. 3 (July 2004): 345-361. See also Culture of Assessment Toolkit available online: <http://personal.anderson.ucla.edu/amos.lakos/index.html> (accessed September 8, 2006).

Evidence Based Library Management—A View to the Future

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Abstract

This paper is an extension of the author's earlier work on developing management information services and creating a culture of assessment in libraries. The author will focus his observations on the use of data in decision making in libraries, specifically on the role of leadership in making evidence based decision a reality, and will review new opportunities for data analysis, assessment delivery and decision making in libraries. Developments in the Information Technology (IT) area, especially the increased dominance of very large networked infrastructures and associated services, large scale digitization projects, collaborative frameworks, and economic and market trends, may well positively impact library options for data use and analysis by library management. A wide range of new products available in the marketplace which assist decision makers, and interviews conducted by the author with over twenty [mostly Association of Research Libraries (ARL)] Library Directors inform this discussion of the use of data in decision making in libraries, specifically on the critical role that leadership plays in making evidence-based decision a reality.

Introduction

This paper is exploratory in nature. While pondering the rapidly changing environment in which libraries exist and deliver services, I decided to revisit some of the ideas that Shelley Phipps and I surfaced during the years we invested in developing the concepts and frameworks that became part of our work on the Culture of Assessment. Within this context, I decided to focus on the crucible of data use for decision making by library directors, mostly in the framework of academic libraries.

The issue is this: libraries in general recognize the value of collecting and using data for planning and decision making, but they do not do this systematically or effectively. Steve Hiller and James Self reviewed in detail the library literature and the library assessment advances as part of their ARL

Making Library Assessment Work project.¹ One of the goals of their project is to facilitate the organization of local processes and structures to advance the ability of libraries to better collect, analyze and apply data to the decision making process. My earlier work on developing a management information system at the University of Waterloo was to counter the tradition of decision making which relied on instincts and general group discussions and which was devoid of data and analysis when making decisions. Eventually, I started looking at organizational climate and culture as vehicles for change in this area, which eventually brought about the idea for the need for libraries and the library profession, to embrace a "culture of assessment" in which decisions are based on facts, research and analysis.

A culture of assessment is integrally connected to the notion of systemic organizational change.² This includes many components and prerequisites, among them the need for libraries to be customer focused, outcomes and impact focused, and the need to act on what is examined, measured and analyzed. The process of assessment needs to be systemic and become part of work. In essence we advocated the need for thinking about the library processes and services from a much more external (or) results oriented perspective. As we conducted workshops for librarians, we identified the theoretical as well as the practical frameworks that are needed in order to "create" a culture of assessment in a given library. In essence, we were advocating a change in our institutional cultures, from a static, institutionally and professionally inwardly focused culture, toward an externally focused institution and profession that needs to embrace the notion of decision making based on measurements and analysis based on facts and customer expectations.

In such a framework, staff and leadership have a clear understanding of what customers expect and value. In this context, collecting and analyzing data is understood as a crucial part of delivering the right services, at the right time to a well understood customer base. In such an environment, continuous

analysis of changing customer expectations is internalized in the institution's vision, mission, processes and impacts.

Although there are signs, very well listed by Hiller and Self, that some movement toward the creation of a "culture of assessment" is becoming more widespread in libraries and in the profession,³ it would be unduly optimistic to say that a majority of libraries have developed a "culture of assessment." That sadly is not the case. And this lack of a culture of assessment is most distressing since the advantages of using assessment as the foundation for decisions will benefit the library, the goals of the parent institution and the expectations of its stakeholders—e.g., students, parents, faculty, employers, governments, etc.

Shelley Phipps and I observed that organizational culture change is possible only when leadership has a clear and articulated purpose for this culture change. To quote: "A well-articulated purpose and vision, communicated clearly by leadership, will guide the organization through real culture change. Leaders who are committed to organizational learning and to continuous improvement of services for primary customers and stakeholders will guide the systems and structure changes needed for cultural transformation."⁴ Because of this, I will focus especially on the role, experience and practice of library leaders in the use of data and analytics in making decisions in sections 5 and 8 of this paper.

A further note about my use of the term "evidence based." I am using this term in its management connotation. Evidence-Based Management (EBM) is a new concept in the management literature. "Basically it is a simple idea. It just means finding the best evidence that you can, facing those facts, and acting on those facts—rather than doing what everyone else does, what you have always done, or what you thought was true."⁵ The principles of Evidence-Based Management were developed by Stanford University's Jeffrey Pfeffer and Robert I. Sutton, and outlined in their book *Hard Facts, Dangerous Half-Truths, and Total Nonsense: Profiting from Evidence-Based Management*.⁶

The Information Economy—Beyond the Library

In this global economy, developed countries are moving increasingly from a resource and manufacturing based economy to an "Information Economy." UCLA's Uday Karmarkar, as part of

UCLA Anderson Management School's Business and Information Technology (BIT) Project, estimates that the United States is already essentially an information economy, based mainly on the information and services sectors or industries. Already in 2004, the information sector comprised over 60% of the US GNP value added in the private sector. In the United States, the information sector comprises over 50% of the economy. The manufacturing sector of the economy has shrunk to less than 16% of the GNP. This rapid transition to a knowledge based economy of course includes the library sector, which is in essence an information and knowledge service.⁷

As part of this trend, successful industries, both in the service and the manufacturing sectors are increasingly built on their ability to leverage information for effective competition and survival. The transition to the Internet enabled the information environment to affect all sectors: manufacturing, energy, defense, education, media, etc.

Uday Karmarkar as well as Thomas Davenport (and for that matter many others) noted the increased need for business intelligence and the use of business intelligence and analysis for the leadership of these companies and decision making purposes. All these companies are both building in-house analytics systems and hiring people with the right skills for managing and analyzing information or buying their information as is needed.⁸

New, so called "killer applications," such as electronic reservation systems, predictive maintenance systems, online ordering, electronic banking and more, have enabled the creation of sophisticated supply chain delivery systems. Supply chain management (SCM) is the oversight of materials, information, and finances as they move in a chain of activities from supplier to manufacturer to wholesaler to retailer to consumer. These systems in turn create new expectations and new disruptive business models.⁹ The power of searching combined with a new advertising and information delivery capabilities, are transforming whole industries. Organizations that apply these new capabilities, i.e., the ability to translate large transactional data into effective structures, processes and decisions, develop competitive business advantages. Companies as diverse as Amazon (e-commerce), Harrah's (gambling & entertainment), Capital One (banking), Toyota (automotive), Wal-Mart (retail), Google & Yahoo (information, media) are using analytics not just

because they have data, but because they must.¹⁰

The importance of developing effective supply chain systems are amply exhibited in companies such as Amazon, Zappos.com, Fed-Ex, UPS and even the US Postal Service, not only in their distribution systems but especially in integrating the supply chain with efficient customer support systems.

The disruptive nature of these new applications is clearly demonstrated by the convulsions experienced by the music, media, and publishing industries, which are all going through stages of major adaptation and restructuring, pushed by new technological breakthroughs that are transforming the way their products are consumed, marketed, organized and more. The economic impact is apparent in the way their products are created, packaged, acquired and distributed. A product such as the iPod, combined with the iTunes Music Store, is changing the way music is packaged, discovered, consumed. Besides creating a whole slew of competing products and services, it forces a wholesome and painful change on the music publishers, media companies, and in essence on the consumers who adopted it and in effect, created it through their behaviors and habits. Many legacy businesses are desperately trying to survive in this new environment by splitting, merging, and looking for new markets and business models.

At the same time new demographics create not only new markets, but new tastes, and new and ever changing trends. The academy is struggling to adapt by leveraging the Internet for e-commerce and the explosion of available and findable information is changing the way we read, learn, keep in contact, teach and consume. Time shrinks. Expectation about service quality is constantly rising.

Library resources and services are transitioning from a static print based content framework to a much more complicated, mainly digital content and service environment. The advent and the maturation of the Internet are transforming all the resources that libraries deal with. This is true in all formats—print, music, film, maps, media, and more. Whole industries are being transformed rapidly as a result of the very fast passed changes in technology that cause ongoing economic, social and political upheavals. The cumulative impacts of these changes are powerful and still not completely understood.

The Information Economy—the Library Perspective

From a macro perspective, the library profession is starting to articulate a need for a fundamental re-examination of the library and the library profession in the new environment. Libraries are investing in digitization efforts in a number of interrelated areas, including digital preservation, resource discovery, scholarly publishing, and digital collection development. These efforts, including the well publicized efforts of Google Library Program and the Open Content Alliance, will increase the availability of digital content and allow for free and unfettered access to public domain works. They will also allow libraries to explore a range of innovative new information services that can be built upon the digitization programs.

In this age of information overload, the library profession needs to focus outward and change what it is about. Libraries need to look at their roles and their services by focusing on the new possibilities emerging from the new information environment. The convergence of information and connectivity, the state of unlimited findability are challenges librarians need to come to terms with.¹¹ The same can be said about the challenges of the “long tail” phenomenon, which describes a business model where low demand products eventually find their own markets. The application of new library tools and services to take advantage of this phenomenon and the implications for library collections, services and supply chain systems is just starting to be examined.¹² OCLC just unveiled (still in beta) the new OCLC WorldCat.org¹³ Web-based search module that enables direct searching of more than 10,000 libraries’ collections.

OCLC’s Research and OCLC Marketing have produced an increasing number of relevant studies investigating the global information environment, the challenges facing libraries in the new environment, the changing perceptions of libraries and more.¹⁴ Because OCLC’s customer base is global and diverse and the quality of their survey superior, the relevance of their findings and forecasting has a high degree of credibility.

The “Environmental Scan: Pattern Recognition (2003)¹⁵ Report” is an invaluable resource for getting an overview of the varied challenges confronting libraries and librarians in this information environment. The findings of OCLC’s study of the perceptions of libraries are enlightening and worth close attention. For

example, the study finds that the “library brand” is still “books,” the library’s main service is still perceived as the borrowing of print books, and most individuals are unaware of and do not use library electronic resources. Most people search non-library search engines and they prefer by-far self-service. Less than 2% of respondents begin an information search on a library Web site.¹⁶ The emerging picture is of an institution that needs to redefine its vision, its values and its services.

Jerry Campbell examined a number of possible future roles for the academic library. He stated:

“Because of the fundamental role that academic libraries have played in the past century, it is tremendously difficult to imagine a college or university without a library. Considering the extraordinary pace with which knowledge is moving to the Web, it is equally difficult to imagine what an academic library will be and do in another decade.”¹⁷

In essence Jerry is questioning the survivability of the current model of the academic library. Even he does not directly deal with the place of assessment in the future of the academic library. James Neal examined the issue of changing skills needs of the library profession, questioning the current relevancy of the MLS, the blurring of the “status” of professional staff, but really asking for a real effort of examining the kind of skills the profession will require to remain viable.¹⁸

At the Greater Western Library Alliance Conference on February 27, 2006, James Neal continued to examine the macro issues that information technology and scholarly communication pose to the future relevance of the academic research library. He identified 24 “imperatives,” some of which are relevant to the discussion on the future assessment in libraries. Among the issues he listed were the need to focus on institutional expectations, on measures of user satisfaction, measures of success, on assessing the impact of library collections and services on an ongoing basis, the measures of cost effectiveness, and the need to continually be able and willing to make difficult choices.¹⁹ He discussed the shifting values of the library, a discussion of which is quite controversial for a large part of the profession. Imperative #22 discusses the need for academic libraries to “prepare for accountability and assessment.”

Neal repeated some of these observations in a somewhat different format at the Taiga Forum, a meeting of Associate University Librarians that was

organized to “develop new solutions, evolve to meet changing user expectations, and prepare leaders for the future. Whether . . . in technical services, public services, collection development, or information technology, . . . libraries must develop cross-functional vision that makes internal organizational structures more flexible, agile, and effective. . . . must move beyond the borders and transcend the traditional library organization.”²⁰ The Forum also put together a list of Taiga Forum Provocative Statements²¹ which surprisingly do not mention assessment or analytics.

Another sign that librarians are starting to view the future differently, is to be found in two new reports. Both the University of California’s—Bibliographic Services Task Force (BSTF) Report²² and the report prepared by Karen Calhoun for the Library of Congress titled: “The Changing Nature of the Catalog and its Integration with Other Discovery Tools”²³ question the viability and effectiveness of continuing investments in local library catalogs, when other, more effective “collaborative” alternatives are possible and will deliver better services and be more cost effective. The implications of these findings have ramifications beyond “the catalog,” since a change in this central library service will have a domino effect on such local “library” processes as collections, acquisitions, public services, document delivery and interlibrary loans, staffing levels, in other words, the future utility, structure, and governance of libraries. These reports reinforce the need to examine fundamental library goals and processes as well as the need to move from the local processes and services to collaborative ones.

New Library Assessment Services and Tools

In conjunction with these macro library developments, there are a number of new assessment tools that have the potential to enable in libraries a better understanding of some of the resources and services they employ. I will list some of the more visible ones.

Reporting software and services, particularly for collection management are emerging. Over ten years ago, I identified the utility of using business intelligence software such as COGNOS to create reporting and analysis modules for libraries to better manage their collection and technical services. In the last two years, we are at last seeing many ILS companies who, in collaboration with various business intelligence software companies,

are developing more mature library reporting modules. Endeavor has worked with COGNOS to bring out Endeavor Analyzer, "a comprehensive reporting and analysis system . . . powerful Web-based system enables a library to make data-driven decisions regarding their library collections."²⁴ SirsiDynix makes available the Director's Station module which uses one of today's leading business intelligence technologies, to "enable libraries and consortia to maximize the value of data already available on their institutions and to make informed, data-driven decisions by providing a unique, customized view of your institution's activities and operations."²⁵ SirsiDynix has a companion product for Director's Station, the Normative Data Project for Libraries (NDP), "whose goal is to compile transaction-level data from libraries throughout North America; to link library data with geographic, demographic, and other key types of data; and, thereby, to empower library decision-makers to compare and contrast their institutions with real-world industry norms on circulation, collections, finances, and other parameters."²⁶

In order to enhance its real time and on-demand report management capabilities, EBSCO, a worldwide leader in providing information access and management solutions through print and electronic journal subscription services, research databases, and more, is partnering with WebFeat and with MPS's ScholarlyFacts. By integrating WebFeat Express into Ebsco's A-to-Z serials management service, it enables its customers to apply WebFeat's SMART (Statistical Measures Available Real Time)²⁷ to track usage and generate reports. Additionally, through a new partnership, usage stats for EBSCO*hos*® Research Databases are available from ScholarlyStats.²⁸

Serials Solutions, a company that delivers tools and services for managing library electronic resources, has a product named Overlap Analysis, which enables a library to generate an unlimited number of statistical reports to evaluate current database subscriptions and make future collection decisions.²⁹ The company is also currently developing for early 2007 delivery, an aggregation and reporting system for usage statistics, named COUNTERcounter, that combines Project Counter vendor statistics files with resource cost details and other metadata from the Serials Solutions knowledge base. COUNTERcounter will store and normalize the data and provide a user-friendly reporting tool to answer librarians' questions about

how much use a resource gets and how much it costs per use.

OCLC developed the WorldCat Collections Analysis module, a "Web-based service that provides analysis and comparison of library collections based on holdings information contained in the WorldCat database,"³⁰ which can be used for benchmarking library collections, rethinking collection budget allocations and collaborative collection development purposes. The implications can be far reaching on planning, budgeting, document delivery, staffing, etc.

One example of consortia analytics activities is work done at the Ontario Council of University Libraries (OCUL), which has developed the Scholars Portal Statistics framework capable of creating reports for the twenty member libraries. Scholars Portal was launched in 2001. The Portal provides access to networked electronic resources purchased consortially by twenty Ontario Universities. The assessment team at OCUL partnered with the Association of Research Libraries Statistics and Measurement Program to utilize Brinley Franklin and Terry Plum's innovative survey methodology, "Measuring the Impact of Networked Electronic Services (MINES)" to assess the impact of the Scholars Portal on the academic community in sixteen Ontario libraries. The 2004-2005 implementation of the MINES Survey at OCUL provided a wealth of information that has helped identify patterns of use of electronic journals, and it provided valuable user opinions from all the consortia libraries.

Through the Scholars Portal Web site,³¹ OCUL library staff can retrieve a wealth of data on the use of locally-loaded resources. This provides a clear indication of the degree to which Scholars Portal is meeting the needs of an institution's users. To better understand the complete use of OCUL electronic resources, use data from multiple data sources and vendor systems is being incorporated into a database and mined through data analysis tools.

Another interesting Scholars Portal module is RACER³² which stands for "rapid access to collections by electronic requesting." It is a Fretwell-Downing Inc.'s VDX (Virtual Document Exchange) software implementation that, through the Ontario University Virtual Union Catalogue enables an interlibrary loan requesting and management system. The module also enables members to create statistical reports.

Another relatively new service is from MPS Solutions. Called ScholarlyStats, it allows libraries to outsource the administration of the usage statistics and analysis of electronic resources. It provides libraries with a single point access for a range of vendor generated usage statistics. This off-the-shelf solution solves the challenge of having one overview to the use of resources from many different vendors.³³

A similar service, Library Dynamics, which employs visualization capabilities, enables libraries to analyze and manage library collections and resources and also benchmark collections. The product analyzes and compares collections for decision support.³⁴

TLC implemented the CARL.Solution,³⁵ an interactive reports management system, with flexible export capabilities that allows library staff and management to create standard and customized reports.

Spotting a potential market, some library consultants are offering statistical analytics and reports as part of their services.

The listing of analytical tools available for libraries to use is growing and points to a number of new and alternative assessment management options available externally to the local library. Acquiring external analytical services may become a way to solve the skills and resources dilemmas facing libraries who wish to integrate assessment into decision making.

Additional Relevant Library Assessment Research

Susan Beck's 2001 paper entitled "Making Informed Decisions: The Implications of Assessment" grappled with the question of the impact of assessment on library management and decision making and the degree to which assessment data has influenced change. Susan conducted interviews at a number of ARL Libraries. She cast her questions wide, attempting to examine issues of institutional accountability, governance, existing assessment activities, impact of assessment data on decisions, the planning process, time spent on assessment, the cost of assessment and more. Her paper lists a number of preliminary conclusions, which in my view are quite optimistic, especially regarding successful integration of a culture of assessment into everyday processes, when taking into account that the concept of culture of assessment was new. Susan recognized that there is acknowledgement of the need for increased

assessment activities and the creation of frameworks to translate knowledge into decisions at the local level. She is in the process of analyzing her data further.³⁶

The preliminary results of a six-university study conducted in 2003/04 by fellows in the UCLA Senior Fellows Program, entitled "The Centrality of the Library: Views of Presidents and Provosts," were presented at the 12th ACRL Annual Conference in Minneapolis, Minnesota, April 8, 2005, by Beverly Lynch, UCLA; Catherine Murray-Rust, Colorado State University; Susan Parker, UCLA; Deborah Turner, University of Washington; Diane Walker, University of Virginia; Frances (Fran) Wilkinson, University of New Mexico; and Julia Zimmerman, Ohio University. They observed that university presidents and provosts have some fondness for the concept and phrase of "the library is the heart of the university," but in the past decade or so, their attention has turned to the more practical matter of expecting the library to demonstrate its value to the teaching, learning, and research missions of the university. It seems that senior university administrators get their library information mainly from their local library directors and they are mostly concerned with campus budgetary issues. They also reported that the library is not seen in the same way that faculty and academic departments are because libraries do not collect comparable data to the academic departments, e.g., course and major enrollment data.

One of the more ambitious activities undertaken to find practical approaches for libraries to develop and sustain effective assessment has been conducted through with the ARL Statistics & Measures Program, under the leadership of Martha Kyrillidou.³⁷ Of particular importance are the various New Measures initiatives,³⁸ initiated by Carla Stoffle from the University of Arizona that defined and supported the collection of a number of new and more effective performance and impact measures for libraries. Some of the more noteworthy projects to mention are—LibQUAL+®, MINES for Libraries™, E-Metrics, COUNTER, learning outcomes and others.

Steve Hiller and James Self reviewed the library literature on use of data in library management and found little evidence of integrated or sustained use in libraries. These findings led to their ARL sponsored "Making Library Assessment Work" project. One of the project goals is to facilitate the organization of local processes and structures to

advance the ability of libraries to better collect, analyze and apply data to the decision making process.³⁹

The rationale and the context to the project is outlined in detail in a *Library Trends* article published in 2004, in which they provide an overview of data use in libraries, organizational barriers to their systematic use, issues dealing with support, and some examples of libraries that have, in their views, successfully integrated data acquisition, analysis and application into management.⁴⁰

Some of their observations were made public at a presentation at the 2006 Annual ALA Conference in New Orleans. These include:

- Every library is unique—with diverse organizational cultures which offer opportunities and challenges for successful assessment
- More assessment work is going on than is being reported—internally and externally
- Important assessment catalysts include: accreditation, facilities renovation, student learning, data driven administrations, LibQUAL+® results, and the “should be doing this” movement
- Increase in interest in assessment and analysis is reflected in creation of new assessment positions and groups

Some of their recommendations are to:

- Involve library staff in responsibility and coordination of assessment
- Create better communications structures and practices
- Prioritize assessment activities; ask critical questions at start
- Upgrade staff skill base
- Demonstrate library’s value to the research and learning enterprises
- Review internal statistics
- Incorporate data into library management by
 - Building management information systems and integrating with campus data “warehousing”

Background to the Interviews

Since my interview sample is mainly drawn from the academic library sector, most of the results may be viewed as applicable to higher education. However, I believe that many of the behavioral

issues are relevant to the library profession as a whole.

I also decided to focus on the library directors as decision makers, because of their leadership role and because they have a very strong influence not only on the culture of the profession, but also on the local institutional culture. Librarians have developed over time a set of leadership and management styles, a set of organizational structures and a set of skill sets that are familiar and readily recognized. Our mental model is quite set. Our values are also set and strongly held. Accepted professional values are known and readily applied. Any external change to them is frequently viewed with suspicion. Consequently, changing “how we do business” is impossible without strong leadership. A “culture of assessment” sounds good, both as a need and a goal, but creating it is difficult for a number of reasons: lack of data collection and data analysis skills, the power of established ways of work, fear, and a general lack of risk taking in the profession.

I decided to focus on directors of university librarians because they are the primary decision makers within their library organizations, and are the ones primarily accountable for the success or failure of their institutions and also because of the influence they exert on their staffs and on the profession.

The Interviews

I conducted a short half hour discussion around the following questions:

1. Where do you get the information or data needed to make your decisions?
2. Does your organizational structure have a unit/person responsible for data collection and analysis?
3. Do (University) administrators expect data-driven decisions/recommendations/requests from the Libraries?

I contacted a non-random list of about thirty mainly University Librarians through e-mail. The response rate was quite high. I conducted interviews with twenty-one University Librarians and campus administrators. Seventeen interviews were conducted by phone, and four were conducted in person.

Summary of Interview Results

1. Discussion item one, focused on sources of available data, what type of data is available, how

easy or difficult it is to collect, varying levels of available analysis and the structure or process for data collection, organization and analysis. Some general results are:

- Most directors are aware of the kind of data that is collected locally, especially those available for in-house processes and externally mandated surveys such as ARL annual data.
- Most directors are trying to implement electronic and internet resource data and usage analytics systems.
- Most directors would like to focus on customer expectations—LibQUAL+®.
- Some directors want cost information, specially “activity based costing” information
- Most directors are not satisfied with their ability to get the data when they need it from their staff. Many complain about resistance from the staff for developing systematic data collection frameworks.
- Most directors are aware that collecting and analyzing the data involves a large effort in staff resources, but comment on the lack of skills and time.
- Some directors noted that ARL rankings are still expected by the campus administrators who have difficulties seeing alternatives to these measures.
- Some directors expressed their own personal difficulties in their ability to systematically use existing data and analysis in the decision making processes—partly because they are used to working by intuition.
- Most directors would like to have staff with skills for data management and analytics.
- There is consensus that the quality of decisions would be higher, more reliable and effective if based on actual data and trend analysis.

2. Discussion item two focused on the creation or the availability of some kind of organizational framework or staff position with responsibility for data collection. Implicit in this question is the creation of some kind of management information system (MIS) or a data warehouse or data farm.

- Many directors indicate that they are already creating positions to concentrate on assessment activities. The content and goals of the positions vary; they can include data collection, coordination of surveys, creation reports, analysis, etc.

- Some of the full time positions have titles such as: Director of Assessment & Planning, Librarian for Research & Communication, Process Improvement Officer, Assessment Officer, Statistics & Assessment Coordinator.
- Most assessment positions are part-time, or are part of an AUL position. It is not clear how effective the part-time positions are, but the trend is encouraging.
- Creating a dedicated team for assessment, such as the team at the University of Virginia, is unique. Most interviewed directors do not perceive that they have financial resources or the human resources for such a framework.
- Reporting lines for assessment staff vary—only a minority report directly to the University Librarian.
- Most library directors are pleased with the results from the assessment frameworks they created.
- A minority think that just embedding assessment responsibilities as part of a senior position will eventually produce some results.
- Those that do not have such frameworks or positions note the challenges:
 - Internal opposition to such a position or undertakings.
 - Staff is not used to working with data and is not interested in working with data and assessment.
 - Lack of skill sets in project management, accounting, information technology, analytics, statistics, etc.
 - Lack of staff vision and lack of a risk taking culture—especially reluctance to stray from traditional library positions.
 - Difficulty of integrating such a position in the existing organizational culture.
- Most directors are aware that an MIS or some other assessment framework will cost in excess of \$100,000 per year. Most are willing to see this expenditure as a positive investment.
- In an ideal world, in the absence of the above mentioned challenges, the interviewees expressed the following wishes:
 - Would want up-to-date data to their desktop (close at hand)
 - Would focus more on local user behaviors and expectations
 - Would focus more on long term trend analysis

- Would focus more on campus learning and research impact measures
- Would focus on having activity-based costing data
- Would focus mainly on electronic and digital services and their impacts.
- Would prefer to be part of a campus based MIS
- Would like to have more regional and national data and benchmarking studies
- Some directors identified the University of Virginia assessment framework and the University of Pennsylvania Datafarm as models
- A minority preferred to stay at arms length from assessment, and would work through an existing staff structures to eventually develop some assessment capabilities.

3. Discussion item three focused on the expectations of libraries from campus administrators, especially regarding data based analysis and reports.

- Most senior administrators do not expect reports with detailed data.
- Some, especially from research institutions, are still very interested in any type of institutional rankings or benchmarks, even when they are aware that they are irrelevant or incorrect.
- Most senior administrators expect mainly budgetary information.
- There is interest in impact data on learning outcomes but the library is not yet viewed as central to these outcomes.
- A minority of campuses has campus wide data frameworks and at those institutions, there is more expectation for real data from the library.
- Many library directors developed relationships based on trust and personal confidence with their superiors. These relationships are not based on the availability or lack of data and analytics.
- Expectations of the library are based on local institutional culture.
- Library directors invest time and effort in studying and adapting to the personal qualities of their superiors. They understand the importance of understanding and using this knowledge for their own and the library's success at the institution.

Some General Conclusions Based on These Interviews:

- Senior university administrators are focused on faculty, research funding, student learning and life. The library is not viewed as connected to these issues or as a central priority for university administrators.
- Assessment or analytics is not currently a central cultural tenet of universities. The importance of assessment initiatives are dependent on parent institutional culture and needs. This lack of institutional culture is central to the slow development of a "culture of assessment" in libraries.
- The library profession is challenged in recruiting librarians with statistical and other analytics and IT skills in enough numbers. Library directors are very concerned by the lack of candidates with these skills from inside the library profession, as well by the resistance of existing librarians to the recruitment of staff without an MLIS to the "professional" ranks.
- Library leaders have succeeded in their careers without an assessment framework. Because of this they, are slow in creating local structures for analytics and are slow in integrating the available data and analytics into their decision making frameworks.
- Library leaders are aware of the need for assessment culture and framework, but are stymied by lack of vision and legacy systems and staff. Some library directors express exasperation with the level of staff push back to assessment and to change initiatives that seem to fly in the face of established library "values."
- Library Directors need to focus on those measures they really need to collect in order to create positive impacts for their customers. Learning from other industries and imagining the future may be one solution.

Forecasting 5-10 Years Ahead

The rapid growth of the information economy is transforming the educational, media, and publishing frameworks and businesses. At the same time, external pressures on educational institutions by their stakeholders (students, parents, governments, accrediting bodies and boards, etc.) will force them to focus on delivering measurable research and learning outcomes. As the accountability movement's position inside the walls of higher education solidifies, and as the goals of

demonstrating measurable “evidence of student learning” becomes universally accepted, libraries will develop realistic structures and work processes toward helping achieve these goals. The potential changes relevant to the future of libraries need to be understood within this context. The need to demonstrate measurable evidences will eventually force “librarians” to change their vision and values and as a result to develop services and processes that are based on working toward realistic learning outcomes. Clarity of purpose will inform the skills within the profession to deliver the needed services efficiently and effectively, and we will be able to learn to measure the right things and change from a culture of intuition-based decisions to more analytics-based decisions.

Taking all the above mentioned factors that influence our work into account, I want to forecast the following future relating to “assessment” in libraries:

1. The centrality of leadership

- Effective implementation of data-driven decision making requires vision, leadership and risk-taking—which in turn depend on character, understanding of economics and changing technology, and understanding of expected impacts.
- Without focused leadership, assessment won't scale. Without direct and consistent support from the library director, assessment activities lose traction and do not penetrate the local library culture. Local assessment frameworks cannot succeed without continuous support from library directors.

2. The need for new skills in the profession

- Lack of needed analytics skills is a key argument for outsourcing local analytics.
- The importance of availability and use of activity based costing and cost benefit analysis will increase.

3. Move from local to networked and collaborative systems and services

- Collaborative frameworks (consortia, state, national, and global) will be organized to maintain, analyze and distribute analytics to local members (local libraries). This will be more accurate and also more cost effective.
- Library consortia and other collaborative frameworks will fill the gap, building analytical frameworks from which they will distribute

reports and analyses as needed to their members. Possible examples: OCUL, OCLC Research & Marketing, CDL Assessment.

- Increased capability for leveraging large information networks for services and analytics may make local assessment frameworks redundant. The information environment is increasingly networked and because of this, most data can be networked generated for local use.

4. Outsource or acquire analytics and reports as needed

- Most local statistical and user information analytics and reports will be outsourced either to a (local) consortia or external professional services.
- Local libraries will buy reports as they need them.

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Keys to Effective, Sustainable, and Practical Library Assessment

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Abstract

The Association of Research Libraries sponsored program "Making Library Assessment Work" was a two year effort to evaluate assessment efforts in ARL Libraries. This effort was led by ARL Visiting Program Officers Steve Hiller and Jim Self and under the aegis of Martha Kyrillidou. Twenty-four libraries participated between February 2005 and December 2006. The program's goals were to assess individual research libraries' assessment efforts, identify assessment barriers and facilitators, and create pragmatic approaches to assessment for individual local environments. Commonly-used assessment methods instituted in the libraries included: LibQUAL+®, usability testing, and locally developed user surveys. After evaluating results from nearly all participating libraries, two elements emerged as key to effective, sustainable, and practical assessment: (1) library leadership and (2) a library that was customer-centered. Other related issues included aspects of organizational culture, assessment responsibility, link and integration with relations activities, presenting results and acting on results.

Introduction

The Association of Research Libraries (ARL) sponsored program "Making Library Assessment Work" was a two year effort to evaluate assessment efforts in ARL Libraries led by ARL Visiting Program Officers Steve Hiller (University of Washington Libraries) and Jim Self (University of Virginia Library) and under the aegis of Martha Kyrillidou, the Director of ARL Statistics and Service Quality Programs. The goals of this project were "to assess the state of assessment efforts in individual research libraries, identify barriers and facilitators of assessment, and devise pragmatic

approaches to assessment that can flourish in different local environments." Seven libraries participated in Phase I (February to June 2005)¹ and another seventeen libraries in Phase II (September 2005–December 2006).

As of September 2006, assessment efforts at twenty-two ARL libraries had been evaluated through the 'Making Library Assessment Work' project. The distribution of the libraries in terms of the size of the libraries as described by the ARL membership criteria index (see figure 1) indicates a wide range of representation among research libraries and relatively symmetrical distribution with a mean rank of 51.5 and a median rank of 49.5.

Making Library Assessment Work

Each participating library prepared a "self study" of its assessment efforts and needs which was followed by a 1.5 day site visit and a report containing recommendations and suggestions for establishing an effective, sustainable, and practical assessment program. Assessment activities were evaluated within the context of the library, the user community, and the parent organization.

Data collection activities related to the assessment visit included a variety of methods deployed during (a) the pre-visit stage, (b) the visit, and (c) the follow up stage, including delivery of the final report. The assessment pre-visit included a survey of assessment activities and needs, followed up with a telephone interview, as well as self guided observation of the library and institutional Web pages. During the visit the team interacted with all library staff during a formal presentation on effective assessment with questions and answers. The remainder of the visit was spent meeting with groups engaged in various assessment projects; some meetings focused on

specific units and functions and others on overall library effectiveness and its relation to the parent institution. The follow-up report summarized the findings from the qualitative data gathering and also provided concrete recommendations to the institution on next steps for strengthening its assessment activities.

During the pre-visit stage the team emphasized that our goal was to engage the library in identifying solid and practical ways to improve its assessment activities. The library was asked to provide a summary of recent assessment activity and an inventory of current statistics collected. Special attention was paid in identifying important motivators for assessment including accreditation, leadership interest from within and outside the library, as well as motivators related to funding. In tandem, particular notice was given to the current organizational structure for assessment with an emphasis on understanding what has worked well to this date, and what the problems or sticking points have been. The institution was asked to articulate specific topics that they would like us to address, and to state their expectations for the visit. At this stage, the team of visitors also asked the institution to identify a follow-up project for which Jim Self and Steve Hiller would provide assistance in the future.

The tallies of commonly used assessment methods are among the key findings from these visits. LibQUAL+® had been used by every library visited, indicating a strong desire to focus on service quality issues and improvement of the organizational operations as perceived by users. Usability testing has also emerged as an important assessment tool. The effectiveness of library operations depends on the virtual presence which is often judged by people who rarely, if ever, set foot on library premises or interact with library staff. Measuring service quality and improving library Web sites are among the two most important goals among the cadre of assessment methods currently used by the participating libraries. Other methods deployed include locally developed user surveys as well as project based surveys. The importance of understanding how library facilities are used is evident by an emphasis on room observation and counts. And, the importance of understanding how library electronic resources are used is evident by an emphasis on e-metrics, any type of measurement that reflects the use and value of electronic resources. Some libraries have placed assessment activities within a larger

performance measurement framework but there is still room for improvement in integrating assessment into a larger, more cohesive framework for management and action.

Accreditation is a key driver for assessment among many of the twenty-two participating libraries. Institutions are being asked to provide evidence of 'excellence in action,' especially in outcomes based learning assessment, and those undergoing the institutional accreditation process are asked to show evidence of this commitment. Another key, yet somewhat unexpected, driver for assessment activities is facilities renovation. As new buildings or renovations are carried out, libraries are being asked to reconsider how the spaces are used, especially with the increasing reliance on online resources. The architectural and space planning teams work with the library to better understand how customers use and want to use library physical space. These planning teams no longer limit themselves to traditional quantitative measures; they now use a variety of qualitative techniques to learn about customer needs. A data driven university administration is another driver for assessment as well as a university that is highly focused on learning outcomes. LibQUAL+® results themselves can be a catalyst as they can motivate staff to learn more about (a) how library services are perceived by different constituencies, (b) how the library compares with peer institutions, and (c) how the library's performance changes over time. Ultimately, every institution needs to 'tell its own story,' and assessment data provide a rich resource for constructing a narrative of where a library stands, where it has come from, where it is going, and how it compares with peers.

The site visits had a positive reception as most staff welcomed the presence of an external team that reinforced the importance of assessment. The discussions were informative and often spirited. And though no library is an island, each is a unique organization that has a strong need to tell its own unique story. Institutions have diverse cultures with different opportunities and challenges for assessment. Often, units within the library are facing the need to make informed decisions, and they engage in assessment activities for such decision making. Such assessment activities are often happening in isolation and are not widely open and available. The 'hidden assessment' activity is a part of the operation of almost every library. Hidden assessment is not always recognized or credited, yet it is a powerful tool

used by library staff to make sense of the external and internal environment.

The 'making library assessment work' effort did increase interest in assessment and coincided with the creation of many new assessment positions and groups in many of the libraries we visited. To move away from the notion that 'library assessment' creates more 'work,' we decided to rename the program 'effective, sustainable, and practical assessment,' and we will continue to offer the service in future years under this new rubric.

Keys to Effective, Sustainable, and Practical Assessment

While local conditions and organizational cultures play important roles in the different approaches each library has taken to assessment, several factors emerged as especially critical for successful assessment. Before we established this service, we

identified a number of keys to effective assessment, listed alphabetically in Table 1, such as: clear and explicit responsibility within the organization of ownership of the assessment agenda, the presence of skills in data analysis and presentation; the support of library leadership and priorities; a supportive organizational culture and structure; sufficiency of resources; as well as the ability of a library to use assessment results for improvement.

After the visits to the twenty-two libraries, two elements emerged as key to effective, sustainable, and practical assessment: (a) the support of library leadership and (b) the presence of a customer-centered library. Other issues included organizational culture, assessment responsibility, integration with planning and statistical gathering activities, presenting results, and acting on results. Each of these issues is discussed below.

Table 1. Keys to Effective Assessment

Prior to Start of Program (not in priority order) • Assessment responsibility • Assessment skills • Data analysis & presentation • Library leadership • Library priorities • Org culture and structure • Sufficiency of resources • Sustainability • Using results for improvement	After Visits to 22 Libraries • Library leadership • Customer-centered library And a few others • Organizational culture • Assignment of assessment responsibility • Integration with related activities • Presenting results • Acting on results

Library leadership supportive of assessment is critical in focusing the mission of a customer-centered organization. The leadership of the organization, including the University Librarian and other library administrators, needs to be willing to commit resources and staff for assessment. Equally important, they should allow staff adequate time to do the assessment activities in a high quality fashion. Leadership should also reinforce the need for evidence in data-based decisions, and make assessment visible within the library. Ultimately, the organizational culture will be shaped by leadership's support for assessment

activities.

The customer centered library is an organization where all services and activities are viewed through the eyes of the customers. The notion that only customers determine quality should be a widespread belief.² As a result, library services and resources will be designed to add value for the customer. User-centered libraries "collect data and use them as the basis for decision-making rather than rely on subjective impressions and opinions."³

But sometimes the evidence is not enough. Organizational culture can affect the ways evidence is used. To facilitate effective assessment,

organizational culture needs to be customer-centered, forward looking, open to change and improvement, inclusive, non-territorial ("we" not "I"), and positive about themselves, the library, and the institution. The culture should stimulate, recognize, and reward initiative and innovation.

Assessment responsibility may lie with an individual or a group of library employees, or a combination of these two elements. The individual responsible for assessment should have an understanding of libraries and higher education, have good standing and established relationships within the organization, be customer-centered, an advocate for customers, and passionate about quality service and assessment. This person should be given enough time to do assessment well. In addition, the person should have a healthy and skeptical perspective, should be willing to learn, and should be aware of assessment efforts throughout the organization.

The group responsible for assessment should represent the whole organization. The group members should be advocates for assessment within the organization, help expand staff knowledge and skills, bring awareness of external assessment efforts to the library, and serve in a liaison capacity with other groups and departments. This group should be able to prioritize and put aside self-interest, and bring unity by focusing on the customer-centered imperative.

Linking to related library and institutional activities is key to effective assessment. These related activities may include traditional library statistics gathering, strategic planning activities, development of performance measures, and specific project support. Identifying and liaising with relevant groups and committees is important for coordination and reviewing of other assessment efforts, and may lead to the development of a repository for assessment-related data. This linking to other efforts often brings together library assessment and the larger institutional assessment, accreditation, and data warehousing processes.

A crucial element for success is the ability to present assessment results effectively. The presentation should be clear and simple, done in such a way that everyone in the audience can grasp the important points. Information presented graphically is usually easier to understand than text and tables. Detailed analysis is generally not appropriate in a group presentation for people who have not directly participated in a project; the focus

should always be on the salient points and the conclusions. Effective presentation greatly increases the likelihood that assessment results will be put to use.

Ultimately assessment results are only as useful as the good use made of them. The library management, with the assistance of the assessment group, needs to be able and willing to identify action items, make changes, and publicize the actions both internally and externally.

Conclusion

Clearly none of these items stands in isolation. They are all interrelated, and as we move forward, our goal is to learn more about the interaction of these factors in different settings through the ongoing 'Effective, Sustainable, and Practical Assessment' service. We also plan to continue to support various forums for the library assessment community: meetings in conjunction with ALA, a Web site, the proceedings from the Library Assessment Conference, a library assessment blog, and the organization of future conferences. ARL will continue to focus on developing staff skills in this area through the Service Quality Evaluation Academy and the availability of training and consulting services.

As we look into the future, we see some critical assessment needs and opportunities. There is a need for studies in the role of the library in student success, the economic value of libraries, and return on investment. We need to define the digital library, and to understand, describe, and measure the use of e-resources. We need to understand changes in how users approach information resources, as well as changes in the relationship between libraries and the teaching, research, and learning processes. In addition, we must learn how to compete and cooperate with Google and other online entities. Finally, we need to find a way to make library assessment affordable, practical, effective, and yet satisfying and fun.

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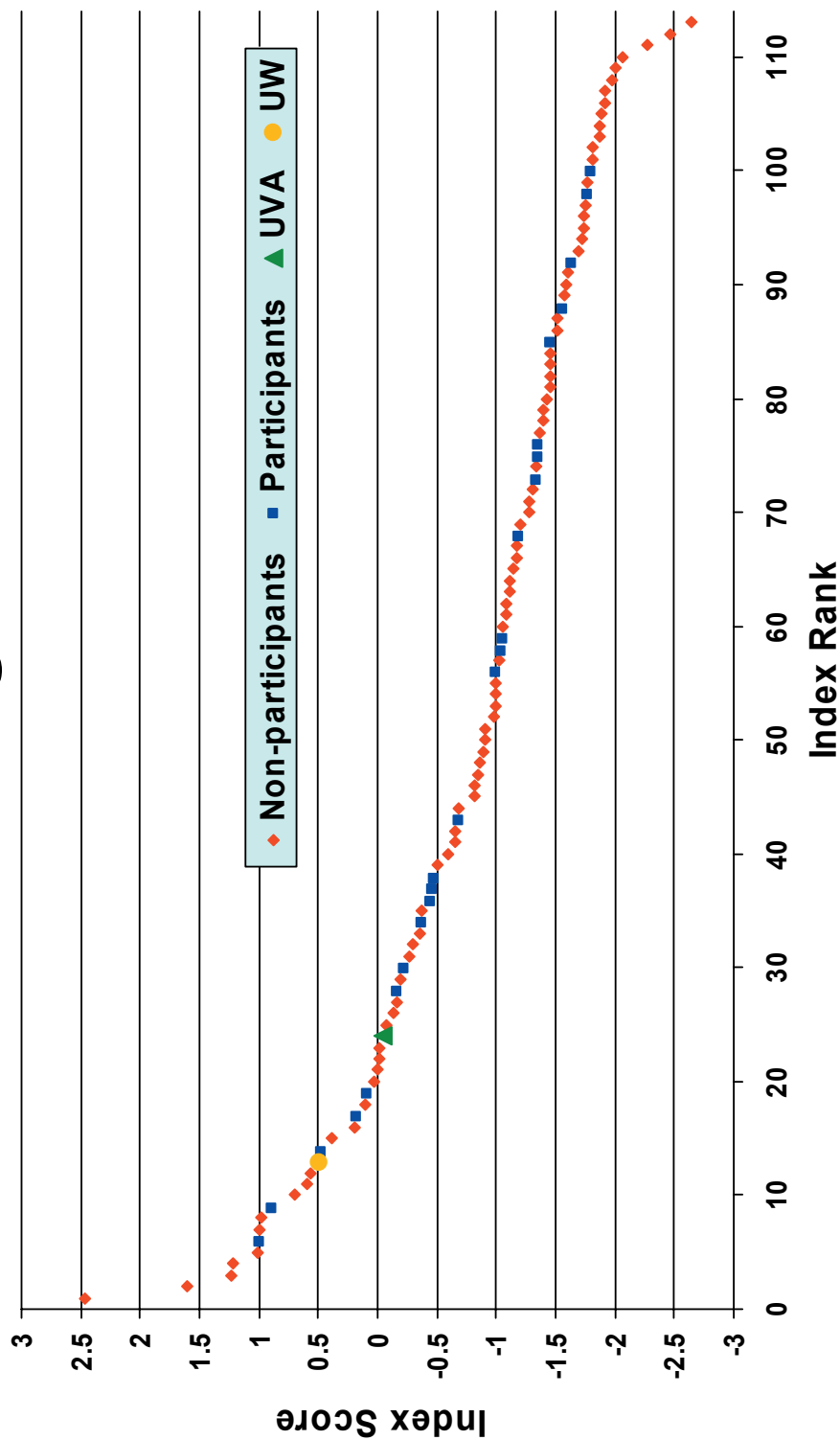
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Figure 1

Distribution Of Participants by 2004 ARL Index Ranking (Mean 51.5 Median 49.5)



The Fourth “R”: Information Literacy in Institutional Assessment

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Abstract

Does your school succeed in producing information literate graduates? How do you know? This presentation will challenge participants to confront the practical difficulties of assessing student information literacy competencies as part of institutional assessment. It will feature a rubric developed to test information literacy competencies, range-finders developed to train raters of student work to use the rubric, and plans for professional development of faculty interested in infusing information literacy skills-development into their courses.

LaGuardia Community College, in Long Island City, NY, has an enrollment of some 13,000 matriculated students (FTEs), an active Adult and Continuing Education program serving about 20,000 students, and three affiliated high schools. It forms part of the publicly-funded City University of New York, a consortium of nineteen community colleges, four-year colleges, and graduate and professional schools.

In 2002, LaGuardia developed an outcomes assessment plan to meet a mandate set by its accrediting agency, the Middle States Commission on Higher Education. Beginning in 2004, a group of library and discipline faculty members has been collaborating on development of a rubric to test student performance in the core competency of “Research and Information Literacy.” The committee did extensive testing of successive versions of the rubric using sample student research papers, annotated bibliographies, and narratives of research. This presentation will introduce the process, the rubric, and the challenges of implementing meaningful assessment.

Introduction

Outcomes assessment in higher education, and concomitantly in academic libraries, seems to have come of age. As accreditation agencies shifted “their attention from input measures (faculty, courses, books) to outcome measures (what

students learn),”¹ libraries began to “move from a content view (books, subject knowledge) to a competency view (what students will be able to do).”² In 1989, the American Library Association (ALA) defined information literacy and thereby defined what it was that students should be able to do.³ In 2000, the Association of College and Research Libraries (ACRL) substantially expanded and concretized that definition in its “Information Literacy Competencies for Higher Education”⁴ (hereafter: “ACRL competencies” or “ACRL standards”). There remained the question of how to assess information literacy (IL) skills and a substantial literature has grown up regarding the implementation of a plethora of assessment methodologies.

Outcomes assessment in higher education, including assessment of IL competencies, can be applied at the course level, the program level, and the institutional level.⁵ Institutional level assessment seems to be the least developed: A “culture of assessment” has taken broad hold⁶ and libraries are testing a variety of ways to assess one-shot instruction, credit courses, and IL programs, but assessment that is intended to answer the larger questions of institutional mission is still a work in progress, fraught with difficulty. Applied to IL instruction, the key institutional-level question is: How do we know whether the school produces information literate graduates? How can we find out which learning objectives give students the most trouble? How can faculty best reinforce IL competencies across the disciplines?

The outcomes assessment plan at LaGuardia Community College in Long Island City, NY, is explicitly a plan of institutional assessment. It intends to utilize scoring rubrics to test student work across time and across the disciplines in order to draw conclusions about the College’s effectiveness in promoting student learning. This paper will use LaGuardia’s experience with assessment of IL at the institutional level to highlight the challenges and potential of this effort.

After providing a brief background about outcomes assessment of IL instruction in general, the paper will trace the history of outcomes assessment of IL instruction at LaGuardia including how the College's IL rubric was developed. The paper concludes with a discussion of the issues still to be resolved on the road toward effective institutional assessment of information literacy.

Outcomes Assessment of Information Literacy Instruction: Background

Outcomes assessment in higher education started some fifty years ago as a largely unheeded cry in the wilderness emanating from accreditation agencies. The Middle States Commission on Higher Education, LaGuardia's accreditation agency, was an early adopter, incorporating assessment in its standards for accreditation as early as 1953.⁷ But the call was widely ignored until the 1970s and 1980s, when demand for accountability in higher education began to overwhelm the resistance of college faculties and administrations.⁸ Faculty saw assessment as a threat to academic freedom and to long-established pedagogies and, since assessment was often an unfunded mandate, it seemed a thankless task, doomed to failure.

Teaching librarians, like their colleagues throughout the academy, tended to be unwilling to take on a job that seemed "too complex and too time-consuming."⁹ Advocates of outcomes assessment of library instruction often found it a hard sell and many conference presentations and journal articles at the time focused on the reasons why outcomes assessment had become a necessity, namely, the power of the politicians' purse, accreditors' insistence on measurable indicators for performance standards and college administrators' need for data. Patrick Ragains wrote in 1997 that "[e]valuation is acknowledged as a weak link in the provision of library instruction"¹⁰; in support, he cited "two comprehensive reviews of the literature on evaluating library instruction."¹¹ The benefits of assessment to students were unclear and the resources to do meaningful studies over long periods of time were not forthcoming. The task seemed so intimidating that Donald Barclay, writing in 1993, had felt moved to write a reassuring article about evaluating library instruction subtitled: "Doing the Best You Can with What You Have."¹²

The ambivalence about outcomes assessment in general was especially pointed with regard to instruction in information literacy. IL was, so to

speak, the new kid on the block in higher education and of uncertain parentage. Although the skills that comprise IL had always been tacitly understood to be standard equipment for any educated person, an explicit definition of IL had not appeared until 1989.¹³ But its appearance under the aegis of the library profession also served, unfortunately, to pigeonhole IL within academia. Oswald Ratteray of the Middle States Commission on Higher Education suggests that "[i]t may be that information literacy, having emerged as an instructional service to students and faculty from the bibliographic instruction community, came to be accepted on campuses as primarily a librarian's responsibility."¹⁴ Librarians themselves often accepted this responsibility even without receiving concomitant support from university administrations.

Moreover, successful inculcation of IL competencies, like the promotion of writing skills, depends greatly on practice and reinforcement throughout a student's education. The Writing-Across-the-Curriculum movement which developed as a response to the acknowledged need for extensive reinforcement of writing had, and still has, no counterpart in IL instruction. Throughout the 1990s, the library profession spent a great deal of time discussing who in academic institutions—librarians and/or faculty—was responsible for inculcating IL.¹⁵ The implications for outcomes assessment were enormous: If it was unclear who should *teach* IL, it was doubly unclear who was responsible for *evaluating* student research skills, information handling abilities, and ethical use of information.

Outcomes Assessment of Information Literacy Instruction Today

Even a cursory look at the recent literature of library instruction assessment—a definitive review of that massive body of work is well beyond the scope of this paper—shows that a "culture of assessment" has taken hold in American higher education and that libraries and IL programs are no exception.¹⁶ Journal articles, conference presentations, seminars, and books spend less time persuading the reader of the necessity of outcomes assessment and more on the nitty-gritty of how to do it: the various techniques of assessment;¹⁷ the writing of learning objectives;¹⁸ the development of practical instruments of evaluation;¹⁹ the use of standardized tests, such as SAILS (Standardized Assessment of Information Literacy Skills) and ETS-

ICT (Educational Testing Systems Information and Communication Technology initiative);²⁰ and, of particular interest here, the use of rubrics.²¹

Analysis of recent articles about rubrics highlights interesting differences among them. Table 1 compares seven recent articles in which development and use of specific rubrics are described. Striking is the variety among the rubrics in their objectives, the student work-product they use for assessment, the number of competencies addressed and the number and designations of levels of performance. The influence of the ACRL standards is evident throughout. An encouraging five out of seven articles discuss rubrics created by the collaboration of library and discipline faculty. All of the articles discuss assessment rubrics as a means toward the end of improving instruction in IL, although the causal connection between assessment results and instruction is not necessarily clear. Certainly, as Knight points out, "there is a shortage of publications that report the result of [rubric] application to student academic work."²²

Table 2 compares seven rubrics found on Web sites of academic institutions (see list in Appendix A). These rubrics are uniformly institutional in nature and closely modeled on the ACRL competencies. They vary in what they seek to measure, the number of competencies and the number of levels of performance and how they name those levels. Only two of the seven rubrics state what student work-product they are intended to test; the Web site of a third (Scottsdale) has recently been updated with specific pilot projects that use adaptations of the IL assessment rubric. Five of the seven rubrics provide information about who developed the rubric: librarians are always involved but in two of the five examples, there was collaboration with non-library faculty. Three out of the seven rubrics appear on the *college* Web site, usually within an assessment page; the rest appear on *library* Web sites. Posting these sample rubrics serves the individual college community well, clarifying academic expectations for both students and faculty. It is unlikely, however, that the samples can be adapted easily by other colleges; they can suggest ideas but they cannot serve in lieu of time-consuming local rubric development.

In the middle of the 1990s, important projects to bring information literacy and its assessment to college campuses took shape: for example, the California State University started an ambitious

university-wide, multi-year IL assessment project, called the CSU Information Competence Initiative.²³ In the state of Washington, the legislature "mandated that [its 6] public universities develop a model of assessment of undergraduate information and technology literacy"²⁴ and librarians responded eagerly.²⁵ However, neither of these projects continued on the planned scale. The centralized CSU initiative gave way to a variety of projects on individual campuses, a list of which can be found at <http://www.topsy.org>.²⁶ In Washington, too, university-wide interest and funding disappeared. However, "[s]ince then, institutions have continued individually according to institutional priorities."²⁷ While interest at the central level has waned, it is evidence of the development of a "culture of assessment" in information literacy instruction that there has been continuation of effort on individual campuses across the country.

Information Literacy at LaGuardia Community College

LaGuardia Community College, in Long Island City, NY, has an enrollment of some 10,000 matriculated students (FTEs), an active Adult and Continuing Education program serving about 40,000 students (head count), and three affiliated high schools. Founded in 1971, it is the youngest member of the publicly-funded City University of New York, a consortium of nineteen community colleges, four-year colleges, and graduate and professional schools. LaGuardia calls itself "The World's Community College" because it serves a hugely diverse student population from over 160 countries, speaking more than 100 languages. It offers thirty-four Associate degrees, among them Liberal Arts and Sciences, Accounting, several licensed Allied Health programs, Business, Computers, Education, Engineering, Human Services, Music Recording Technology, and Veterinary Technology. LaGuardia has a highly developed IL program which dates from early in the College's history. It includes:

- Credit courses: The three-credit LRC 102, "Information Strategies," and the one-credit LRC 103, "Internet Research Strategies," both qualify as liberal arts electives and both have been taught in learning communities (clusters or pairs).
- One-shot classes: Classes are mandatory for all ENG 101 (Composition) courses and optional

for all others. All library faculty teach one-shot classes.

- Drop-in or sign-up workshops on Web basics, selected databases, citation styles, and other topics, as needed.
- Mandatory sign-off on IL component of all new course proposals.
- Annual Research Review Competition which awards term papers best demonstrating library research and use of resources.

Assessment of LaGuardia's IL program has been slow to develop. The work of students in the credit courses is evaluated in the traditional ways—midterms and finals, assignments, and a major term project consisting of an annotated bibliography and a narrative of the research that went into creating the bibliography. The one-shot classes have generally been assessed, if at all, mostly anecdotally, by informal conversation with faculty and self-reporting by students. Such "evaluation" seems to be the norm in many colleges, probably because one-shot classes are much more difficult to evaluate effectively than term-long credit courses. But self-reporting is not worth much: as Pausch and Popp note, "What is shown in the literature, for the most part, is user satisfaction with the one-shot session, when it is possible that the patrons do not know enough to be dissatisfied."²⁸ The LaGuardia Library has tried some pre- and post-testing and some analysis of student papers at the end of the semester. Follow-up has been too spotty to draw any real conclusions but the more serious issue is that even when reliable data has been collected, there was no assurance that the outcomes were causally linked to library instruction.

Enter Middle States

The Middle States Commission on Higher Education, LaGuardia's accreditation agency, has been particularly active in promoting both outcomes assessment and the institution-wide integration of IL and its assessment. In 2002, Middle States issued a revised set of accreditation standards, *Characteristics of Excellence in Higher Education*, that placed heavy "emphasis on institutional assessment and assessment of student learning."²⁹ The term "information literacy" had first appeared in the 1994 edition of *Characteristics*; the 2002 edition used the ACRL's IL competency standards³⁰ to expand on the notion of IL as a set of

skills that are "an essential component of any educational program."³¹ Middle States then followed up with the publication of *Developing Research & Communication Skills: Guidelines for Information Literacy in the Curriculum*,³² and made outcomes assessment a key element of the interim Periodic Review Report which institutions must file at the five-year point of the ten-year accreditation cycle.³³ In the words of Oswald Ratteray, Middle States sees IL as a "meta-outcome in the learning process . . . invoked during the acquisition of all other learning outcomes."³⁴

It follows from this approach that the institution as a whole is responsible for student acquisition of IL skills. Thus, "all personnel involved in curriculum development, teaching, the assessment of learning, and individual and institutional improvement will confront the subject of information literacy. It can be marginalized no longer as someone else's (i.e., the librarian's) concern."³⁵ The "mission of graduating students who are information literate"³⁶ belongs to the entire college. Middle States thus addressed the two major stumbling-blocks before IL assessment at LaGuardia and elsewhere: IL, it declared, was inextricably part of the institutional mission and IL assessment had to be part of institutional outcomes assessment. Whatever the difficulties, the colleges would have to find a way.

Institutional Assessment at LaGuardia

At LaGuardia, outcomes assessment began in the early 1990s as a serious but under-funded mandate, established by administrators who saw the writing on the wall put there by New York State legislators and Middle States accreditors and decided that they could no longer "manage by anecdote."³⁷ The initiative faced all of the problems noted above—lack of money and staffing, limited faculty buy-in, confusion about assessment techniques, doubts about costs and benefits—but by 2002, when Middle States required an outcomes assessment plan as part of the College's 2002 *Self-study*,³⁸ LaGuardia had not only developed a plan of action but had in place administrative support, sources of funding, additional staff, a Center for Teaching and Learning, a program of professional development for faculty, a fledgling ePortfolio project to collect student work for assessment purposes, and at least partial faculty buy-in: all of the pieces of scaffolding needed to make possible implementation of the

outcomes assessment plan.

LaGuardia is now implementing the college-wide plan of program and institutional outcomes assessment mandated and approved by Middle States in 2002.³⁹ The plan is essentially a strategy for *institutional* assessment, the cornerstone of which is appraisal of student work across the disciplines. This work will represent student efforts at a baseline level (in an early writing course), in the middle of the student's career at the College, and in a capstone course. The plan calls for the assessment of student progress in seven core competencies which are required in every major and thus form the College's general education requirements.⁴⁰ The seven core competencies include writing, reading, critical thinking, quantitative reasoning, oral communication, research and information literacy, and technological literacy. The assessments of the baseline and capstone work will also be used to assess student achievement of program goals.

Electronic student portfolios are being used at LaGuardia to collect student work and make it accessible to faculty for assessment purposes and to preserve it so that comparisons can be made over time and across disciplines. Within one to two years, the College hopes to have all students creating personal ePortfolios in their initial semester at the College and maintaining and updating the contents of the ePortfolios throughout their careers at the College. The students will be free to update anything in their portfolios except the assignments deposited in the "assessment area," which will remain as a snapshot of their progress across time. Faculty doing assessment will be able to pull random samples of student work posted at various points in their careers at LaGuardia and probably classified by program or course, and apply rubrics developed to test each of the core competencies.

Assessment Rubrics

Many means of outcomes assessment are available and LaGuardia uses a variety of such tools for a variety of evaluation and reporting purposes. For assessment of student achievement of core competencies, LaGuardia has chosen to develop and implement scoring rubrics. Why rubrics, given that developing rubrics is a very labor-intensive and time-consuming process? Rubrics seem to be the best performance measure to assess reliably and

objectively a substantial amount of student work across disciplines and across time. Surveys are not detailed enough and self-reporting is a limitation; pre- and post-tests that get at higher-level cognitive abilities are difficult to administer in more than one or two classes and hard to interpret; locally-developed tests are hard to compare over time and often too specific for institutional evaluation; standardized tests (e.g., SAILS) are being developed but their usefulness is limited depending on local factors; interviews and focus groups can be useful but cannot reach many people and provide little chance of comparing outcomes over time. Rubrics provide an external, relatively objective measure of competency⁴¹ and faculty trained in norming sessions using range finders seem to be able to attain a fair level of inter-rater reliability. Rubrics can be applied to many different kinds of student work product and, applied systematically over time, can provide "authentic assessment" which "measures not only what students learn through library instruction, but also how the learning is subsequently incorporated into their academic work."⁴²

Rubric Development at LaGuardia

The first rubric developed for LaGuardia's outcomes assessment plan covered three of the core competencies, writing, reading, and critical thinking. Dubbed "Critical Literacy," it is to be applied to all forms of student writing. It defines each competency to be assessed and distinguishes six levels of performance using a list of adjectives to describe each (see Appendix B). Levels 1 and 2 represent acceptable skill levels for an entering freshman, levels 5 and 6 those of a student ready to be a college junior. The assessment committee charged with creating the rubric was advised by LaGuardia Professor Jack Gantzer, an expert on rubric development, that effective rubrics cannot be created in a vacuum and then applied to student work; they must arise out of the materials to be tested. Therefore, the assessment committee read hundreds of student papers as the participants sought to verbalize, define and categorize the characteristics of student work at various levels of ability. After much discussion, revision and testing of the draft rubric against more student work, the developers arrived at a text which they no longer considered a draft—although further tweaking might become necessary. Then the developers

selected range finders for use in training faculty to apply the rubric consistently. Range finders are samples of student work at each level of competency (a "perfect 6," "perfect 5," . . .).

Throughout the process, the assessment committee, which consisted of faculty from various areas of the College (Cooperative Education, Counseling, English, Library, Mathematics, Paralegal Studies, and Psychology) saw themselves as contributing to an effort in *institutional* assessment, via their work in developing an in evaluation of skills that the entire College is charged with inculcating into all students. The papers that the committee read ran the gamut from compositions and literary critiques to mathematics problems, nursing case notes, research papers in anthropology and other fields, nutrition analyses by dietetics students, and so on. The Critical Literacy rubric is intended to apply to all of them.

Development of the Information Literacy Rubric

The Critical Literacy rubric served as the model for the Information Literacy rubric (see Appendix C). An assessment committee of faculty and administrators drawn from the Library, English, Sociology, and Nursing developed a draft IL rubric for three learning outcomes, distilled from the more complex and detailed *Information Literacy Competency Standards for Higher Education* of the ACRL.⁴³ Following the example of the Critical Literacy rubric, the committee defined six levels of competency for each learning outcome rather than either four or five levels. Having more levels makes discrimination among them more difficult but also more revealing. Having an even number of six levels forces the rater to choose, in cases of doubt, between level 3 and level 4; with five levels, it is too easy to settle on level 3. As in the Critical Literacy rubric, levels 1 and 2 represent acceptable skill levels for an entering freshman, levels 5 and 6 those of a student ready to be a college junior.

Although the committee started by reading student work of all kinds, it soon became apparent that only written assignments that are explicitly research-based can be used to test IL, even though virtually any assignment requires students to apply some IL skills. Especially important were narratives of research, collected largely from those assigned to students in the Library's credit courses. Thus, the document specifies the sort of student work to

which each element of the rubric applies:

- The rubric for Learning Outcome I—determining information needs and searching effectively—is to be applied to a narrative of research or other assignment which requires the student to record and reflect upon the process of accessing information for research.
- The rubric for Learning Outcome II—evaluating sources effectively—is to be applied to the text of a research paper.
- The rubric for Learning Outcome III—using information ethically—is to be applied to in-text citations and bibliographies.

Like its Critical Literacy counterpart, the draft IL rubric underwent much pruning and revision as the committee tested it against additional student work and used it to develop range finders for training prospective users. English and Library faculty, who had never seen the rubric, and participants at a City University of New York general education conference in May 2006, were recruited to test both the rubrics and the range finders. After completing their review, the committee was finally able to delete the word "draft" from the text of the rubric document with the understanding, however, that, like all rubrics, it remains a work permanently in progress.⁴⁴

In its current form, one of the potential weaknesses is that it relies heavily on adjectives and adverbs to make distinctions among the different levels, e.g., superior, effective, mostly effective; comprehensive, quite comprehensive, insufficiently comprehensive, limited, etc. This approach lends itself to some ambiguity and requires extensive training of faculty in order to assure inter-rater reliability. On the other hand, it is more nuanced than more quantitatively-oriented rubrics. It is possible that the adjectives and adverbs could be retained but with definitions attached that include numeric ranges.

Another potential weakness—or, perhaps an opportunity—of the IL rubric is that the only source of assessment data for Learning Outcome #1 is research narratives in which students describe how they chose the research topic, how they narrowed it to a manageable research question, and how they found and evaluated the materials included in the bibliography. Currently, only the Library's credit courses consistently require such narratives and even those often do not provide sufficient evidence

of the skills being tested. Since lack of evidence does not necessarily indicate lack of skill, the committee has requested that Library faculty provide more explicit prompts, asking students for detailed, step-by-step narratives. Faculty teaching other courses, starting with participants in the “Building Information Literacy in the Disciplines” seminar (see section below), will be asked to incorporate a similar assignment into their syllabi. While faculty understandably resent being asked to revise course content, assignments and/or pedagogy in order to make possible the assessment of learning rather than learning itself, there is no doubt that, in addition to providing valuable assessment information, narratives of research are also an excellent pedagogical tool. The reflective essay helps to focus students’ attention on what they are actually doing when they develop a research question, choose a database or search engine, select keywords, revise searches, evaluate materials, and so on. As a kind of “capstone” assignment, a narrative of research touches on all of the ACRL IL competencies.

Information Literacy Assessment as Part of Institutional Assessment

Eventually the IL rubric will be applied systematically to samples of student work, over several semesters, with the intention of assessing, not students individually (they will already have been graded for the work), but any course or program in the College or the competencies of a given cohort of students. Assessing IL competencies early in a student’s career at the College (e.g., in ENG 101), sometime in the middle (e.g., in a 2nd- or 3rd-semester course), and at the end (in a final capstone course) should provide useful comparison data for the program/institutional assessment being required by Middle States accreditors. Analysis of results over time should help answer such questions as: What IL skills do LaGuardia students possess when they graduate? Do students in program X demonstrate sufficient progress in information literacy competencies by the time they graduate? With which learning objectives do students have the most difficulty? The answers to these questions would be used to inform revision of the Library’s information literacy program, curricula College-wide, and the design and delivery of instruction.

Thus, the IL rubric is indeed a tool not only for

course and program evaluation but also for institutional assessment. Although limited to the review of research-based student work, it can be applied to any discipline and to cohorts of students with any demographic or academic characteristics. In addition, the effort of developing the rubric has highlighted the need for an information-literacy-across-the-curriculum approach and for professional development of faculty across the College. As a result, the Center for Teaching and Learning has tapped faculty from the Library, the Humanities department and the English department to create a year-long seminar called “Building Information Literacy in the Disciplines” (BILD). The seminar will raise awareness among faculty about IL skills and help faculty develop assignments through which students will acquire and practice these skills. Along with information literacy-rich syllabi, BILD hopes to create a community of faculty across the disciplines who understand the issues of information literacy instruction and will advocate for its reinforcement across the curriculum. Outcomes assessment is, of course, a necessary part of that effort. BILD participants will be trained to use the IL rubric to assess their own students’ work and work deposited by other students in ePortfolios. They will also be encouraged to create assignments—notably, narratives of research—that will both strengthen student skills and provide assessment data via rubric analysis.

What Have We Learned?

Ratteray describes a “strategic triad” of assessment in which planning for and implementation of outcomes assessment lead to improvement of student learning and institutional effectiveness.⁴⁵ In this model, LaGuardia stands near the end of the planning process and at the beginning of implementation. A look at what we have learned from this effort gives a glimpse of what more needs to be done.

On Rubric Development:

1. Rubric development is extremely time-consuming and labor-intensive and requires the support of the College and Library administration and at least some faculty buy-in. The reading of massive numbers of student papers must be preceded by the tasks of collecting them, deleting identifying information, making multiple copies, and

record keeping. The draft rubric needs to be widely tested and even a “final” rubric may need subsequent tweaking.

2. Every institution must create its own rubrics. Samples from other colleges are useful to a small degree but they cannot easily be adapted. There is no effective alternative to local rubric development. It follows that, while rubrics can be effective for institutional assessment, they will not provide grounds for comparison of competencies among different schools even if the various rubrics are based on the same ACRL standards.
3. The need to revise rubrics as time goes on raises the issue of the reliability of the resultant assessment data. How can we compare results over a period of, for instance, five years if the rubric has changed in the meantime?

On Rating of Student Work:

4. Rating student work is also a time-consuming process with its own reliability issues. Will it really be possible to assess IL competencies over time and across disciplines? Student papers, especially freshman composition papers and narratives of research, have a limited shelf life. Even though ePortfolio software is capable of preserving the work for the foreseeable future (assuming appropriate maintenance by Information Technology departments), how will raters, for instance, five years hence be able to judge papers that use databases and search techniques that have long been superseded?
5. It is difficult, if not impossible, to rate student work without the text of the prompt to which the student was responding. Collecting and maintaining that information can be administratively difficult. The need also raises issues of faculty privacy (see item #6 below).
6. Still to be resolved at LaGuardia are issues of student and faculty privacy. Procedures have not been developed for obtaining permissions to view student work and faculty prompts in ePortfolios. It is unclear how much identifying information will accompany the work in the assessment area, but without some demographic and academic metadata about the student work, the value of the assessment will be seriously compromised. In addition, there are questions of how and where assessment

results will be stored, who will have access to them, and how they will be used.

7. Inter-rater reliability: Who will do the rating of student work and analysis of the data? How will these individuals be trained and how will inter-rater reliability be assured?

On Faculty Collaboration:

8. Narratives of research from library and non-library courses across the college are needed to implement an Information Literacy rubric. In addition to providing useful assessment data, reflective narratives have been embraced by many but not enough faculty as a pedagogically sound use of student time.

On the Limitations of Rubrics:

9. It is almost impossible to use rubrics to establish true causality, that is, to determine what a given program or course—much less a single class—has contributed to student research, attitudes toward information, or citation skills. Assessment with rubrics should be thought of as a tool for identifying the strong and weak points in student IL skills and then instituting enhancements in instruction to improve student learning. Follow-up assessment will not “prove” that the enhancements worked; they will only highlight again what skills students still need to improve.

On the Assessment Cycle:

10. Improvement of student learning is the goal of the entire outcomes assessment process. True commitment to this process can be measured by the degree to which the improvements suggested by assessment are funded either from existing budgets or, if necessary, over the longer term via a strategic planning process.⁴⁶

Conclusion

If outcomes assessment has indeed come of age at LaGuardia, that does not mean that it has reached maturity. The College has invested a great deal of thought, energy, time, and money in planning its institutional outcomes assessment effort and in beginning the implementation. The process has generated the questions raised above. While they seem intimidating, the very formulation of the questions is a sign of progress; they clarify the road ahead toward effective assessment that will lead to improvement of student information literacy skills.

Table 1: Comparison of Information Literacy Rubrics Described in the Literature⁴⁷

	Emmons and Martin (2002)	Choinski, Mark, and Murphey (2003)	Franks (2003)	Hutchins (2003)	Kobritz (2003)	Bloomberg and McDonald (2004)	Knight (2006)
Objective of assessment	Program (one-shot instruction)	Course ("Information Resources")	Program (one-shot instruction)	Program (one-shot instruction)	Program (IL outcomes in Communications and Media Arts program)	Course, Program, and Institutional	Course (IL competencies in a research and writing course)
What student work is to be tested?	Papers for English course	Final reflection paper	2 assignments and group presentation for Education 101	Annotated bibliography for Political Science course	"Source Evaluation" sheets for communications Law and Ethics course	Courses from across the college	Bibliographies produced in first-year research and writing course
Number of competencies	10	20	5,6,9	6	7	21 initially, 12 after revision	5
What competencies/outcomes are to be tested?	Accuracy of citation plus 3 criteria each to establish relevance and credibility of sources and student "engagement"	How well students answered detailed questions about their research	How well students articulated research question; selected, evaluated and cited materials; and presented their research as a group	Annotations, types of resources selected, appropriateness of sources, currency, quantity of sources, bibliographic format	Performance-based learning objectives related to research strategy, evaluation of materials, synthesis of information, and citation	Initially, one objective per ACRL competency plus "self-assessment" goal; streamlined revision retains the more concrete competencies and the self-assessment goal	Location of materials using efficient search strategy, articulating credibility of sources, annotation, citation

	Emmons and Martin (2002)	Choinski, Mark, and Murphey (2003)	Franks (2003)	Hutchins (2003)	Kobritz (2003)	Bloomberg and McDonald (2004)	Knight (2006)
Is there a link to the ACRL competencies?	Considered in the development of the rubric	Rubric items and ACRL competencies explicitly linked	IL outcomes based on ACRL competencies	ACRL competencies were matched to IL and political science course objectives	Considered in development of the rubric	Explicitly based on ACRL competencies	Explicitly based on ACRL competencies
Levels of performance	4	5	3,3,5	3	4	4 initially, 3 after revision	3
Names of levels of performance	Excellent, Adequate, Limited, Poor	None	For 2 assignments: Exemplary, Competent, Emergent; group presentation: "WOW," Solid / substantial, Met expectations, Needs help, Poorly done	Exceptional, Acceptable, Weak	Mastery, Good Progress, Minimally Acceptable, Needs Further Instruction	Accomplished, Proficient, Developing, Novice; revised version eliminated "Developing" and added column for N/E (No Evidence)	Advanced, Proficient, Beginning
Who developed the rubric?	Instruction Librarian and English Professor	Librarian (course instructor)	Instruction Librarian and Education Instructor	Instruction Librarian and two Political Science Professors	Instruction Librarian	Library Director and 2 Professors (Biology and Bus. Admin.)	"Librarian and several faculty members"
Developers' view of rubrics	Useful for teaching students, evaluating student work and training new faculty	Objective, unbiased, revision needs are "surmountable," not too time-consuming, usable as one tool of assessment	Provide data for tracking progress of library instruction, useful to students	Catalyst for collaborations between library and discipline faculty; enhance student learning	Difficult but worth the effort	Permanent work in progress	"Valuable assessment tool that provides a reliable and objective method for analysis and comparison"

	Emmons and Martin (2002)	Choinski, Mark, and Murphey (2003)	Franks (2003)	Hutchins (2003)	Kobritz (2003)	Bloomberg and McDonald (2004)	Knight (2006)
Comments		Rubric was the same as that used by the instructor to grade the student papers.	Instructor's grading rubric was used for group presentation.		Learning objectives were created using the ABCD method (Audience, Behavior, Conditions, Degree)	Original rubric was included by Middle States as a model in <i>Developing Research and Communication Skills</i> . ⁴⁸	Explicitly based on ACRL competencies

Table 2: Comparison of Information Literacy Rubrics Posted on World Wide Web (see Appendix A)

	Bay Area Community Colleges	California State University	Delaware Technical & Community College	New Jersey City University	Scottsdale Community College	University of Arkansas	Yakima Valley Community College
Objective of assessment	Consortial	Institutional	Institutional	Institutional	Institutional	Institutional	Institutional
What student work is to be tested?	Information Competency Proficiency Exam, in two parts	Not specified	Not specified	Library's Info Lit Tutorial ⁴⁹ and specific exercises from Burkhardt handbook ⁵⁰	Not specified	Not specified	Not specified
Number of competencies	One for each exam question	5	5	6	6	2	5
What competencies/outcomes are to be tested?	How well students do on multiple choice/short answer test and performance-based exercises	ACRL competencies	How well students frame research question, access and evaluate sources, use info and understand info issues	Further revision of rubric in Bloomberg and McDonald. ⁵¹ Two versions: "online" linked to tutorial, "printed" linked to Burkhardt handbook	ACRL competencies plus demonstration of information technology skills	How well students 1) extract, record and manage info and 2) document sources	ACRL competencies
Is there a link to the ACRL competencies?	Test is explicitly based on ACRL competencies	Explicitly based on ACRL competencies	Explicitly based on ACRL competencies	Based on ACRL competencies	Based on ACRL competencies	Based on ACRL competencies	Based on ACRL competencies
Levels of performance	Variable: stated as point scores for each test question	3	5	6	6	4	5

	Bay Area Community Colleges	California State University	Delaware Technical & Community College	New Jersey City University	Scottsdale Community College	University of Arkansas	Yakima Valley Community College
Names of levels of performance	None	Advanced, Proficient, Beginning	Proficient, Satisfactory, Emergent	Accomplished, Proficient, Developing (formerly: Novice)	Exceptional, Proficient, Novice, Unsatisfactory	Exemplary, Accomplished, Developing, Beginning	Proficient, Acceptable, Developing, Unacceptable
Who developed the rubric?	Several librarians from Bay Area community colleges	Ilene Rockman, librarian-manager of CSU Information Competence initiative	Librarians	Library Director and 2 Professors (Biology and Bus. Admin.); revision based on classroom testing	Not stated	Not stated	Library Director and Biology Professor
Location on the Web	On librarian's info lit Web site, www.topsy.org	On university Web site	On Delaware Tech Libraries Web site	On library Web site	On college's Outcomes Assessment Web site	On college Web site, under "Student Learning"	On library Web site
Comments	Includes acceptable and unacceptable answers to test questions and complex, 8-p. explanation of how to score actual student research.	Developed for the CSU Information Competence initiative.	Rubric was created to foster collaboration with discipline faculty and meet Middle States requirements		Site updated 5/06 to include IL instruction and assessment projects from Eng., Bio. & Nutrition, each adapting the rubric.	One of the University's "General Education Competencies."	

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Appendix A: Examples of Information Literacy Rubrics Posted to the World Wide Web:

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**The Fourth “R”: Information Literacy in Institutional Assessment, L. Fluk, F. Egger-Sider, A. Rojas
Appendix B: Critical Literacy Rubric adopted at LaGuardia Community College, Long Island City, NY**

CRITICAL LITERACY: WRITING, READING, AND THINKING COMPETENCIES ASSESSED FROM A STUDENT-PRODUCED TEXT

ASSESSING CONTENT OF TEXT (WEIGHT = 50%)		ASSESSING STRUCTURE OF TEXT (WEIGHT=30%)	ASSESSING LANGUAGE & STYLE OF TEXT (WEIGHT=20%)
CRITICAL READING	CRITICAL THINKING	LOGIC, ORGANIZATION	GRAMMAR, MECHANICS, VOCABULARY, IDIOM
Competency definition: • Essay responds to the prompt; appropriate response to assignment. • Appropriate use of readings and/or sources to support well-developed thesis. • Evidence of reflection or analysis. • Ability to summarize a text • Ability to synthesize across texts • Ability to recognize and respond to textual assumptions, arguments, and bias • Ability to evaluate purpose, structure and logic in a text and draws sound and informed inferences • Awareness of language (vocabulary, denotation/connotation, etc.), contexts, and tone	Competency definition: • Ability to evaluate logic, relevance, and validity of information and argument • Ability to recognize and respond to assumptions, arguments, and bias • Ability to draw sound and informed inferences • Ability to analyze complex issues and arrive at and explain reasoned conclusions • Confident presentation of multiple points of view	Competency definition: • Clear, logical development of the main idea or thesis. • Identifiable beginning, middle, and end. • Consistently adequate support, from appropriate sources, for the main idea in each paragraph • Evidence of skill in using devices such as transitions/coherence markers to achieve fluency. • Cogent, consistent and self-aware expression of the writer's voice in the context of the perspective of others.	Competency definition: • Competent application of basic conventions of grammar, usage, mechanics and spelling. • Use of vocabulary appropriate to the task. • Sentence variety. • Effective use of phrasing and syntax. • Evidence of idiomatic fluency.

7/23/2003 ; REV. 9/25/2003, 11/12/2003

ASSESSING CONTENT OF TEXT (WEIGHT = 50%)	ASSESSING STRUCTURE OF TEXT (WEIGHT=30%)	ASSESSING LANGUAGE & STYLE OF TEXT (WEIGHT=20%)
CRITICAL READING / CRITICAL THINKING	LOGIC, ORGANIZATION	GRAMMAR, MECHANICS, VOCABULARY, IDIOM
Level 6: Superior		
Words to Describe Level 6 Critical Reading/Critical Thinking: comprehensive, very accurate, insightful, pithy, academic, fully realized, confident, creative/original, analytical, sophisticated, logical, sound, incisive, persuasive, broadminded	Words to Describe Level 6 Structure: impressively well-organized, sophisticated, flowing, convincing, coherent, with a distinctly evident voice	Words to Describe Level 6 Language and Style: creative, very clear, exceptional, sophisticated, imaginative, flowing, snap and pop
Level 5: Strong		
Words to Describe Level 5 Critical Reading/Critical Thinking: strong, quite comprehensive, quite accurate, effective, often insightful, generally convincing and supported, usually academic, often creative or original, sufficiently analytical, lucid	Words to Describe Level 5 Structure: effective development, generally logical and coherent, quite smooth transitions, writer's voice is evident.	Words to Describe Level 5 Language and Style: strong, effective, quite sophisticated, quite creative, clear, quite imaginative, quite smooth, the whole hangs together
Level 4: Adequate		
Words to Describe Level 4 Critical Reading/Critical Thinking: OK, not bad, basically understands, unsophisticated but gets and makes the point, gets the gist, lacking mastery but still in control, limited scope but more than single perspective, occasionally original	Words to Describe Level 4 Structure: competent organization, with management of structure though sometimes heavy-handed use of transitions, adequate support, reasonable or average skill in sustaining voice	Words to Describe Level 4 Language and Style: acceptable, average, standard, appropriate, competent, somewhat imaginative, reasonably clear, reasonably effective, not completely fluid, purged of most of the pratfalls
Level 3: Less than Adequate		
Words to Describe Level 3 Critical Reading/Critical Thinking: superficial, lacking understanding, non-academic, undigested, unfinished or in need of revision, underdeveloped, missing the target. Perfunctory rather than original	Words to Describe Level 3 Structure: below average, lacking overall coherence, lacking in effective focus and plan, mechanistic rather than fluid, formulaic	Words to Describe Level 3 Language and Style: just below average, too many unacceptable elements, not competent, not completely clear, not very imaginative, little or no creativity, dull and generic

ASSESSING CONTENT OF TEXT (WEIGHT = 50%)	ASSESSING STRUCTURE OF TEXT (WEIGHT=30%)	ASSESSING LANGUAGE & STYLE OF TEXT (WEIGHT=20%)
CRITICAL READING / CRITICAL THINKING	LOGIC, ORGANIZATION	GRAMMAR, MECHANICS, VOCABULARY, IDIOM
Level 2: Weak		
Words to Describe Level 2 Critical Reading/Critical Thinking: poor, sketchy, impaired, profoundly deficient, woeful, inappropriate to assignment, poorly developed, less than perfunctory, lacking in originality	Words to Describe Level 2 Structure: lack of overall plan, disjointed, ineffective and unclear, lacking transitions, poorly developed, with little or no supporting material, fragmented, uncertain voice, higgledy-piggledy	Words to Describe Level 2 Language and Style: too many unacceptable elements, incompetent use of conventions of writing, unclear in many places, ineffective, unimaginative, narrow, not creative, inaccessible
Level 1: Unacceptable		
Words to Describe Level 1 Critical Reading/Critical Thinking: no understanding, totally lost, unintelligible, simplistic, undeveloped, un-connected to the prompt.	Words to Describe Level 1 Structure: very weak organization or no evident organizational plan, undeveloped, with little or no supporting material, few, if any, transitions or other structural devices, no definable beginning, middle, end, no personal voice emerges, shapeless, 'a loose, baggy monster'	Words to Describe Level 1 Language and Style: very weak, unimaginative, incompetent use of language, lacking any flow, completely unclear

The Fourth “R”: Information Literacy in Institutional Assessment, L. Fluk, F. Egger-Sider, A. Rojas
Appendix C: Information Literacy Rubric adopted at LaGuardia Community College, Long Island City, NY

LaGuardia Community College Information Literacy Rubric

- **Learning Outcome I – Determining Information Needs and Searching Effectively**
The student is able to:
 - **identify keywords**
 - **identify appropriate sources of information**
 - **apply effective methods of accessing the information**

Score	Rating	Rating Criteria and Guidelines (applied to narrative of research)	Adjectives
6	Excellent	• Demonstrates clear understanding of many different types of information sources and how to access them. • Demonstrates superior analysis of the information need and the ability to follow leads in the search for further resources.	analytical, comprehensive in use of resources, impressive, insightful, original, strongly evidence-based, superior
5	Proficient	• Demonstrates clear understanding of several different types of information sources and how to access them. • Demonstrates effective analysis of the information need and fluency in use of a variety of resources.	sufficiently analytical, quite comprehensive in use of resources, often insightful, often original, effectively evidence-based, strong
4	Satisfactory	• Demonstrates some understanding of some different types of information sources and how to access them. • Gives specific, mostly effective, keywords and/or specific evidence of other techniques used in searching, sufficient to replicate the search.	competent, somewhat analytical, reasonably clear in understanding, occasionally insightful or original, insufficiently developed in use of resources, somewhat evidence-based, average
3	Limited	• Demonstrates limited understanding of types of information sources and how to access them. • Does not give specific keywords and/or specific evidence of other techniques used in searching (i.e., does not provide enough information to replicate the search).	non-analytical, lacking in understanding, limited in use of resources, superficial, formulaic, underdeveloped, unsophisticated, insufficiently uncritical, inadequately evidence-based, perfunctory, just below average, missing the target

Score	Rating	Rating Criteria and Guidelines (applied to narrative of research)	Adjectives
2	Poor	- Shows poor understanding of different types of information resources and how to access them. - May demonstrate searching errors sufficient to negatively affect retrieval results or may show discouragement with the viability of the chosen research topic.	seriously lacking in understanding, largely uncritical, deficient, disjointed, not evidence-based, unsupported, well below average, ineffective, unclear
1	Insufficient	- Shows erroneous understanding or no evidence of understanding of different types of information resources and how to access them. - Gives no evidence of search technique.	totally lacking in understanding, incompetent in use of resources, simplistic, fragmented, not evidence-based, unintelligible

Learning Outcome II – Evaluating Sources Effectively

The student is able to:

- evaluate sources of information critically

Score	Rating	Rating Criteria (applied to text of research paper <i>or</i> alternative research assignment)	Adjectives
6	Excellent	• Interprets and evaluates the information collected insightfully.	analytical, comprehensive in use of resources, impressive, insightful, original, strongly evidence-based, superior
5	Proficient	• Interprets and evaluates the information collected reasonably well.	sufficiently analytical, quite comprehensive in use of resources, often insightful, often original, effectively evidence-based, strong
4	Satisfactory	• Makes fair attempt to interpret and evaluate the information collected.	competent, somewhat analytical, reasonably clear in understanding, occasionally insightful or original, insufficiently developed in use of resources, somewhat evidence-based, average
3	Limited	• Fumbles the attempt to interpret and evaluate the information collected.	non-analytical, lacking in understanding, limited in use of resources, superficial, formulaic, underdeveloped, unsophisticated, insufficiently uncritical, inadequately evidence-based, perfunctory, just below average, missing the target
2	Poor	• Makes poor attempt to interpret or evaluate the information collected.	seriously lacking in understanding, largely uncritical, deficient, disjointed, not evidence-based, unsupported, well below average, ineffective, unclear
1	Insufficient	• Makes no attempt to interpret or evaluate such information as was collected.	totally lacking in understanding, incompetent in use of resources, simplistic, fragmented, not evidence-based, unintelligible

Learning Outcome III – Using Information Ethically**The student is able to:**

- cite sources appropriately and accurately
- use an appropriate citation style consistently

Score	Rating	Rating Criteria	Adjectives
6	Excellent	• In the text, clearly acknowledges sources through precisely incorporated citations. • In the bibliography, includes complete bibliographic information, formatted with almost complete accuracy.	accurate, complete, consistent in style, thorough
5	Proficient	• In the text, clearly acknowledges sources through carefully incorporated citations. • In the bibliography, includes enough bibliographic information, formatted with sufficient accuracy, for the reader to find all materials.	largely conforms to format used, mostly accurate, quite consistent in style, quite thorough
4	Satisfactory	• In the text, acknowledges sources through citations with some format errors that do not impede comprehension. • In the bibliography, includes most bibliographic information required, formatted, for the most part, accurately.	partially accurate, not completely consistent in style, not completely thorough
3	Limited	• In the text, acknowledges most sources through citations, but contains some errors that impede comprehension. • In the bibliography, some bibliographic information is lacking or, if included, inaccurately formatted.	many inaccuracies, haphazard, often “hit or miss,” often inconsistent in style, not thorough
2	Poor	• In the text, does not adequately or consistently acknowledge sources. • In the bibliography, much bibliographic information is lacking or, if included, very poorly formatted.	poor in understanding of citation styles, insufficient, inaccurate, inconsistent, weak
1	Insufficient	• In the text, does not acknowledge sources at all. • Does not include bibliographic information.	totally lacking in understanding of citation styles

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The Right Assessment Tool for the Job: Seeking a Match between Method and Need

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Abstract

Until recently, the demands faced by other academic units on campus have passed over college and university libraries. Now, academic librarians are increasingly pressured to prove that the resources and services they provide result in improvement in student learning and development. In answer to calls for accountability, academic librarians must demonstrate their contribution to the teaching and learning outcomes of their institutions. One way librarians can achieve this goal is by assessing information literacy instruction on campus.

When assessing information literacy skills, academic librarians have a variety of outcomes-based assessment tools from which to choose. The selection of an assessment tool should be based on the purposes of an assessment situation and the “fit” between the needs of an assessment situation and the strengths and weaknesses of individual assessment approaches. In this paper, participants will learn about the major purposes of assessment and how they impact the criteria used to select an assessment tool. Among the purposes of assessment that will be discussed are the needs to respond to calls for accountability, to participate in accreditation processes, to make program improvements, and to enrich the student learning experience. Participants will also learn about several criteria useful in selecting an assessment tool including utility, relevance, stakeholder needs, measurability, and cost.

The paper will also describe the benefits and limitations of several outcomes-based approaches to the assessment of student learning outcomes. Specifically, participants will learn about assessment tools that evaluate student learning outcomes taught via information literacy instruction. The theoretical support, benefits, limitations, and relevant research related to the use of surveys, tests, performance assessments, and rubrics will be outlined and examples given of each assessment tool.

Armed with background knowledge and lessons learned from colleagues throughout higher education, academic librarians can embrace the effective and efficient assessment of information literacy instruction efforts on their campuses. This presentation will give participants a “jump start” toward becoming proficient assessors ready to answer calls for accountability.

Introduction

In the 21st century, institutions of higher education face calls for accountability. In this environment, academic librarians have responded to requests for the evaluation of information literacy skills and library instruction programs by learning about and testing assessment approaches. Before librarians launch into detailed assessment efforts, however, they should carefully consider the purpose of such assessments, use established criteria to select assessment tools, and understand the benefits and limitations of specific assessment approaches.

Purposes of Assessment

Before beginning assessment projects, librarians should first consider the purpose of their assessment efforts. Shepard states:

The intended use of an assessment—its purpose—determines every other aspect of how the assessment is conducted. Purpose determines the content of the assessment (What should be measured?); methods of data collection (Should the procedures be standardized? Should data come from all students or from a sample of students?); technical requirements of the assessment (What level of reliability and validity must be established?); and finally, the stakes or consequences of the assessment, which in turn determine the kinds of safeguards necessary to protect against potential harm from fallible assessment-based decisions.¹

Librarians who assess information literacy skills

and programs may have multiple purposes in mind. Among them are two overarching goals: 1) to respond to accountability measures, including accreditation mandates, and 2) to improve library instruction programs, and 3) increase student learning.

Responding to Calls for Accountability

Perhaps the most common purpose for assessment is to respond to a call for accountability from institutional administrators or accreditors.²

Accreditors en masse acknowledge the importance of information literacy skills. According to Gratch Lindauer, in recent years most accreditation standards have increased their emphasis on the teaching role of libraries.³ As a result, librarians increasingly find themselves at the front and center of accreditation processes.

Some authors believe that reflection initiated by accreditation may result in a significant paradigm shift in librarianship. Accreditation brings librarians the opportunity to reflect and “determine whether the library is asking the right questions, collecting useful data, analyzing the data effectively, disseminating the data to those who can benefit, and relying upon data effectively for decision making and improvement.”⁴ Thompson suggests that accreditation requirements demand:

A shift in the established library instruction paradigm at many institutions. Responsibility shifts from librarians teaching students how to locate materials for particular assignments, to faculty and librarians working together to embed the teaching and learning of information literacy skills systematically into syllabi and curricula. The new paradigm requires librarians and faculty to adopt a broader sense of the role of information literacy skills in higher education and in the preparation for the professional workforce. It also demands the learning of new methods and concepts by both teaching faculty and librarians, as they develop a collaborative approach to the integration of information literacy into general education and disciplinary education.⁵

Although accreditation processes hold the promise of rethinking and reflection among librarians, they may also cause a number of difficulties.

In many universities, the “teaching-learning role of academic libraries is well established, as are the expectations of accreditation agencies that libraries connect their evaluation of collections, resources,

and services to educational outcomes.”⁶ On other campuses, these library roles and expectations are new. As librarians reposition themselves at the center of teaching and learning (and thus accreditation) they may turn to existing measures of library effectiveness for help. Unfortunately, much of the data recorded in annual reports and reviews will not help libraries demonstrate how libraries impact student learning.⁷ Furthermore, accreditation documents do not generally outline the ways in which libraries might demonstrate the effects of their programs on institutional effectiveness.⁸ As a result, at some universities, “librarians ponder their mandate but concede a lack of authority or resources to succeed with anything ambitious.”⁹

Improving Program Performance & Structure

In addition to responding to external calls for accountability, another significant purpose for assessment is to inform decision-making¹⁰ in order to improve the quality or performance of a program.¹¹ Several authors confirm the role of assessment in program improvement. Samson writes, “Assessment offers a value-added dimension to a library instruction program. It provides a beginning point to ascertain the program’s effectiveness and to guide direction for future instruction.”¹² Without assessment, program weaknesses cannot be identified and corrected through effective decision-making. Knight acknowledges the importance of documenting both the strengths and “areas of improvement” in library instruction programs.¹³ Perhaps Barclay states the connection between assessment and improvement most clearly: “Unless evaluation will somehow improve the thing being evaluated, it is not worth doing.”¹⁴

Assessment can also have the very practical purpose of improving the structure of a program. For example, assessment can be used to connect a program mission with the missions of the larger organizational body or institution. Assessment can also be used to reinforce, emphasize, align, or realign activities with a previously defined mission of a program.¹⁵ Additionally, assessment leads to opportunities for celebrating successful achievement of a program’s mission.¹⁶ Success can be leveraged to form collaborations, find funding, and champion change. Knight asserts that the data resulting from assessments help strengthen librarian connections with faculty members.¹⁷ Assessment can also support requests to continue

or increase funding. This purpose is important for information literacy instruction programs, especially those that must justify their existence or risk losing financial support.¹⁸ Even if assessment yields negative results, it can still be used to improve program structures. Grassian and Kaplowitz suggest that librarians can use negative results to argue for greater financial support by highlighting where funding could be used to improve the program.¹⁹ As Knight suggests, "It is . . . important to view assessment programs not as ends . . . but . . . as significant sources of information that foster feedback for change."²⁰

Improving Student Learning and Teacher Skills

Although assessment is often conducted to respond to calls for accountability, participate in accreditation, or improve programs, many authors argue that the main purpose of assessment is to improve student learning. According to Popham, "The central mission of all . . . assessment is (1) to help you make valid inferences about your students so that you can then (2) make better decisions about how to instruct those students."²¹

Assessment allows programs to demonstrate their contribution to student learning and a quality university experience. The ACRL Instruction Section recognizes that library instruction programs must become involved in assessment to document the campuswide impact of library instruction and information literacy.²² Instruction librarians must "find out whether or not what is taught is useful."²³ They must demonstrate that students acquire information literacy skills through library instruction.

Assessment not only documents student learning, but also provides important feedback teachers can use to improve their skills. Grassian and Kaplowitz state that librarians, "assess, evaluate, and revise because we want to find out if our instruction has been effective. In other words, we need to find out how well our goals and objectives have been met. Furthermore, we want to highlight areas where our efforts might be improved for the future."²⁴ Sampson writes, "Assessment provides the opportunity to take a fresh look at the classroom experience."²⁵ Arter confirms that assessment "demystif[ies] the learning process" and makes teachers and learners equal stakeholders in learning.²⁶ Through assessment, teachers and students become partners in the learning process.

Criteria for Selection

Once a decision is made to conduct an assessment, the next step is to select a method or tool for assessment. Maki writes:

As institutions increasingly commit to assessing student learning . . . the first challenge they face is to decide which assessment methods to use. Identifying or developing assessment methods requires a thorough understanding of what each actually measures and how each relates to a program's articulated outcomes and expected levels of student performance. That is, what methods best enable an institution to determine how well students have met its expectations?²⁷

Rather than selecting the method that is most familiar, librarians should select assessment methods intentionally.²⁸ Among the criteria librarians should consider are: utility, relevance, needs of stakeholders, measurability, and cost.

Utility

Before selecting an assessment method to evaluate a library instruction program, teaching librarians should determine the utility of the method. Bresciani suggests asking three questions to determine the utility of a measure: "Will this assessment method help me understand what it is that is contributing to the end result stated in [the measured] outcome? Will this assessment method help me understand why I am delivering the services in the way that I am? Will the evidence collected from this method help me understand how to maintain status quo?"²⁹

Relevance

In addition to utility, librarians should consider the relevance a particular assessment method has to learning and ask themselves whether or not the assessment method will answer questions about student learning. Grassian and Kaplowitz confirm that, "assessment methods should be selected because of their relevance to the learning outcomes or performances to be measured."³⁰ Prus and Johnson state unequivocally that, "If an assessment method doesn't measure what your program teaches, or doesn't measure it with precision, or doesn't suggest what the program's strengths and weaknesses are, then that assessment method cannot serve the institutional effectiveness goals of your program."³¹

Stakeholder Needs

When selecting an assessment tool, librarians should consider the needs of stakeholders, including both the audience that assessment data will be reported to and the participants who will undergo assessment. Stakeholders need assessment data to be displayed in a format that is easily understood.³² Librarians should consider who will see final results and use knowledge of stakeholders when determining the level of preciseness, level of detail, and speed of reporting.³³ Finally, librarians undertaking assessment should reflect upon the needs of those who are assessed, including how many there are, who they are, and what their assessment experience might be.³⁴

Measurability

Two additional considerations in choosing a method for assessment are measurability and cost. Colton, et al. defines measurability as whether or not the tool measures what it intends to measure (validity) with consistency (reliability), and he lists measurability as the first focus in choosing an assessment tool.³⁵ Prus and Johnson define internal validity as “maximum relevance to the unique aspects of the local program curriculum” and external validity as “maximum generalizability to similar programs at colleges across the state, region, and nation.”³⁶ These aspects of measurability can significantly impact the credibility of an assessment method.³⁷

Cost

A final key consideration in selecting an assessment method is cost.³⁸ Ideally, educators should choose the assessment method that best fits their programmatic and instructional needs, but cost is a practical concern that cannot be ignored. Cost is impacted first by the scope of an assessment and whether entire populations must be assessed or a sample will suffice. Time is another “cost” that should be considered. In fact, time is one of the most common reasons for not conducting assessment at all.³⁹ Librarians should consider the time that is required for creating a tool, implementing it and analyzing it.⁴⁰ Prus and Johnson agree that librarians should consider whether the cost of a particular assessment method is practical, including time, effort, and money in their deliberations.⁴¹

Outcomes-Based Assessment Tools

Once librarians articulate their purposes for

assessment and criteria for selecting an assessment tool, the next step is to select an assessment approach. Fortunately, there are a wide variety of assessment tools from which librarians can choose including surveys, standardized tests, performance assessments, and rubrics.

Surveys and Standardized Tests

In academic libraries, outcomes-based surveys “provide information about the students’ library skills before [or] after a sequence of library instruction and/or research activities.”⁴² Some libraries have endeavored to transform outcomes-based surveys into standardized tests in order to administer and score the assessments in a standard, predetermined way⁴³ and to strive for objectivity.⁴⁴ Most outcomes-based surveys and standardized tests focus on multiple-choice or true/false items.⁴⁵

Outcomes-based surveys and standardized tests offer a number of benefits to librarians seeking to engage in assessment. Indeed, librarians have “realized some success with summative assessment devices, such as tests and surveys.”⁴⁶ As quantitative measures, surveys and tests provide data in numerical form and are excellent choices to find answers to questions of how much or how many.⁴⁷ They are easy to score and require less time and money, especially if computers are used for scoring.⁴⁸ In this way, they allow for the collection of a lot of data quickly.⁴⁹ Surveys and tests are good tools for measuring students’ acquisition of facts⁵⁰ and can be used to compare pre- and post-test results⁵¹ or to compare groups of students to each other.⁵²

Another advantage of surveys and tests, especially those made up of multiple-choice items, is that they can be made highly reliable.⁵³ In fact, high reliability is one of the most frequently cited advantages of surveys and tests.⁵⁴ One way to increase the reliability of a multiple-choice survey or test is to make it longer.⁵⁵ Lengthening a survey or test is much easier than lengthening other types of assessment methods.⁵⁶ Furthermore, test/retest and parallel forms reliability estimates are easier to obtain with surveys and tests than other assessment methods that take more time or are difficult to repeat exactly.⁵⁷ Indirect assessments like surveys and tests also tend to have a higher predictive validity with “a variety of outcome measures, such as college GPA or scores on other standardized tests.”⁵⁸

Still another advantage to using outcomes-based surveys and tests for assessment is that people

believe in them.⁵⁹ Because the public is familiar with commercially designed tests and believes them to be extensively developed, tests can be used for “enhanced political leverage.”⁶⁰ Policy makers may prefer standardized tests because they compare students’ achievement against other groups or national profiles.⁶¹ Parents and students might also value such normative comparisons and try to use them to identify an individual student’s strengths and weaknesses.⁶²

Locally developed outcomes-based surveys have several additional benefits. First, they have the benefit of being adapted to local goals and student characteristics.⁶³ The process of developing the surveys can help staff determine what they really want to know about student learning.⁶⁴ Local grading is an additional benefit—staff have control over the interpretation and use of the results and students receive immediate feedback.⁶⁵ Commercially developed standardized tests also offer two benefits: they can be implemented quickly and they reduce the staff time that would be otherwise used to develop and grade another assessment measure.⁶⁶

On the other hand, outcomes-based surveys and tests have many limitations, and while outcomes-based surveys and standardized tests are widely used, most educators now recognize that they “have always been fallible, limited measures of learning goals.”⁶⁷ Overall, outcomes-based surveys and standardized tests have several limitations: they do not test higher-level thinking skills, they lack authenticity, they focus on “score-spread,” they tend to have the problems associated with all high-stakes testing, and they are time consuming to create, difficult to analyze, and problematic on a local level.

A major limitation of outcomes-based surveys and standardized tests is that they are indirect assessments that fail to measure higher-order thinking skills.⁶⁸ As “objective” tests, they measure low-level recognition rather than recall.⁶⁹ Because of artificial time limits and the pressure to survey as much content as possible, outcomes-based surveys and tests rarely involve the interrelation of dimensions of the same topic.⁷⁰ By focusing only on individual parts of a concept, test creators tend to develop over-simplified test items. Because of this limitation, it is very difficult to use outcomes-based surveys and standardized tests to quantitatively measure the results of improved information literacy instruction.⁷¹ In fact, indirect assessments, like outcomes-based surveys and standardized

tests, may “dramatically under-represent” constructs like writing, critical thinking, and information literacy.⁷² Grassian and Kaplowitz state that such tests are “less valid for testing higher-level cognitive skills such as analysis, synthesis, and evaluation, or to determine process learning and the acquisition of concepts. As such, they may not be appropriate for many [librarians’] needs.”⁷³

A second limitation of outcomes-based surveys and standardized tests is their inability to provide an authentic assessment of student learning. These types of tests are “frequently criticized for setting up an artificial situation that does not really test how the learner would react in a real-world situation.”⁷⁴ Because of this, outcomes-based surveys and standardized tests tend to “overassess student ‘knowledge’ and underassess student ‘know-how with knowledge.’”⁷⁵ As a result, students who score well on outcomes-based surveys and standardized tests may only be demonstrating that they are good test takers.⁷⁶ When faced with a real-world scenario, these students may not be able to formulate an appropriate response.⁷⁷

A third important limitation of outcomes-based surveys and standardized tests is that most are designed to produce variance of scores, or “score-spread.” Most standardized tests are intended to allow comparisons among students or groups of students. To do this, the tests must spread out student scores, rather than allow them to bunch together. The time constraints of most standardized tests exacerbate the problem of score-spread because test designers strive for maximum score-spread in the fewest number of test items.⁷⁸ The use of score-spread techniques results in the creation of tests that cannot detect effective instruction⁷⁹ and, according to Popham, are inappropriate for assessing program or institutional effectiveness.⁸⁰ Even tests that are purported to be criterion-referenced, rather than norm-referenced, are usually constructed in the same way as traditional standardized tests, with the same focus on score-spread. Therefore, they are still “unsuitable for evaluating educational quality.”⁸¹

A fourth significant limitation of outcomes-based surveys and standardized tests of information literacy instruction is that they are sometimes used as “high-stakes” tests. Shepard explains:

High-stakes testing is a term that was first used in the 1980s to describe testing programs that have serious consequences for students or

educators. Tests are high-stakes if their outcomes determine such important things as promotion to the next grade, graduation, merit pay for teachers, or school rankings reported in a newspaper. When test results have serious consequences, the requirements for evidence of test validity are correspondingly higher.⁸²

Because of the high stakes of such assessments, tests that fall into this category must “meet the most stringent technical standards because of the harm to individuals that would be caused by test inaccuracies.”⁸³ This is problematic because group administered multiple-choice tests “always include a potentially higher degree of error, usually not correctable by ‘guessing correction’ formulae,” resulting in lower test validity.⁸⁴ Prus and Johnson also caution that standardized test results are “highly susceptible to misinterpretation and misuse both within and outside the institution” and are “unlikely to have direct implications for program improvement or individual student progress.”⁸⁵

Three more limitations round out the problems associated with outcomes-based surveys and standardized tests. Surveys and tests are time-consuming, demand significant resources, and provide inferential results.⁸⁶ Grassian and Kaplowitz state that “fixed choice assessments (multiple-choice, true/false, matching) are high on control but are difficult and time consuming to construct. They require a good deal of specialized training to develop and analyze.”⁸⁷ If test data is not analyzed or interpreted, such assessments drain resources. Even so, Ewell and Jones suggest that “conclusions drawn from indirect indicators [such as surveys and standardized tests] are highly inferential even when the data are presented from multiple measures.”⁸⁸

When outcomes-based surveys and standardized tests are locally developed, a few additional limitations apply. The process of constructing a survey is a difficult one. Locally developed surveys and tests require leadership, coordination, and expertise in measurement.⁸⁹ A survey with good psychometric properties can take years to develop,⁹⁰ and an outcomes-based survey or test may take even longer since they require not just content expertise, but also expertise in the study of learning.⁹¹ As a result, locally-developed surveys and tests may not provide for “externality” or a “degree of objectivity associated with review and comparisons external to the program or institution.”⁹² Even if a local assessment is

determined to be adequate, it’s important not to administer the same test so often that students become “over-surveyed.”⁹³

Performance Assessments

Many modern educators feel a “growing dissatisfaction with selected-response testing.”⁹⁴ Because of the limitations of outcomes-based surveys and standardized tests, the emphasis on quantitative results that once dominated assessment conversations in higher education is beginning to give way to discussions of qualitative forms of assessment.⁹⁵

There are a number of ways to structure performance assessment. Performance assessments generally “simulate as much as possible the situations in which students would make integrated use of the knowledge, skills, and values developed in the course.”⁹⁶ For example, instead of scoring a student’s answers to a set of answers provided by a teacher,⁹⁷ a performance assessor might observe a student’s performance of a task or a product of a performance, and judge its quality.⁹⁸ Other methods that have been used for performance assessments are open-ended or extended response exercises (such as questions or other prompts that ask students to explore a topic in writing), extended tasks, or portfolios.⁹⁹ Constructed-response tasks have become popular because they capture what is valued instructionally in a form that can be easily assessed.¹⁰⁰ In general, “Most educators regard performance assessment as an attempt to measure a student’s mastery of a high-level, sometimes quite sophisticated skill through the use of fairly elaborate constructed-response items and a rubric.”¹⁰¹

Performance assessments should exhibit a number of characteristics. Performance assessments should be meaningful and authentic.¹⁰² Wiggins states that performance assessments should involve actual “performances, not drills. A test of many items (a drill) is not a test of knowledge in use. ‘Performance’ is not just doing simplistic tasks that cue us for the desired bit of knowledge. It entails ‘putting it all together’ with good judgment; good judgment cannot be tested through isolated, pat drills.”¹⁰³ Shepard agrees that assessments should “require more complex and challenging mental processes from students. They should acknowledge more than one approach or one right answer and should place more emphasis on un-coached explanations and real student products.”¹⁰⁴ Shepard also notes that performance assessments should be

open-ended enough to allow each student “to bring to it his individual gifts and to maximize individual learning.”¹⁰⁵

Performance assessment offers numerous benefits to teachers and learners. Among them are the close connections between instruction and assessment, the ability to measure higher-order thinking skills, and the contextualization of assessment that leads to greater equitability and validity.

Perhaps the greatest value of performance assessment is that the form and content of the assessment method can be closely aligned with instructional goals.¹⁰⁶ As a result of this alignment, “the use of performance assessment in the classroom has been seen by some as a promising means of accomplishing a long-standing, elusive goal—namely, the integration of instruction and assessment.”¹⁰⁷ Because instruction and assessment are integrated in performance assessments, educators can learn about a broader range of learning outcomes and, at the same time, “preserve the complex nature of disciplinary knowledge and inquiry, including conceptual understanding, problem-solving skills, and the application of knowledge and understanding to unique situations.”¹⁰⁸ Furthermore, performance assessments allow educators to capture students’ learning of higher-order thinking and reasoning skills, skills that are typically absent in more traditional forms of assessment.¹⁰⁹

Another benefit of outcomes-based performance assessments is that they are contextualized. According to Wiggins, “There is no such thing as performance-in-general. To understand what kind and precision of answer fits the problem at hand, the student needs contextual detail.”¹¹⁰ Performance assessments recognize the contexts in which students work and aim to “invent an authentic simulation . . . and like all simulations . . . the task must be rich in contextual detail.”¹¹¹ Through contextualization, performance assessments help students understand the relevance of what they learn.¹¹² Performance assessments also can “reflect . . . society’s demands for education that prepares students for the world of work.”¹¹³ According to Farmer, “Authentic assessment helps bridge the two worlds. . . . They show that [students] can apply theoretical concepts to solving life-like problems. As a result, education doesn’t seem to operate in a vacuum; it truly prepares students for the rest of their lives. [It is] real learning for real results.”¹¹⁴

According to Silver, there are a few technical and feasibility issues that have, in the past, thwarted attempts to use performance assessment on a large scale.¹¹⁵ Among these are cost, time, and generalizability. For example, compared to traditional tests, performance assessments can be costly to develop, administer, and score.¹¹⁶ However, Silver offers hope that, in the future, new technologies will decrease the costs associated with test development, administration, and scoring.¹¹⁷ Another limitation of an outcomes-based performance assessment approach is time. Sweet notes that performance assessments require greater time, in both planning and thought, from both teachers and students.¹¹⁸

A third limitation of outcomes-based performance assessment approaches is the generalizability and comparability of results.¹¹⁹ Popham asks, “How many performance tests do students need to complete before the teacher can come up with valid inferences about their generalizable skill-mastery?”¹²⁰ He fears that many tests may be needed and, as a result, cautions educators to use performance assessment to assess “only the most significant of your high-priority curricular aims.”¹²¹ Still, this concern about the generalizability of performance assessments may be only temporary. According to Silver, “Generalizability across tasks may be increased through the use of intelligent systems that offer ongoing assessment well integrated with instruction and sensitive to changes in students’ understanding and performance, with performance data collected over a long period of time as opposed to one-time, on-demand testing.”¹²² Overall, Silver suggests that advances in cognitive sciences and technology may resolve the limitations of performance assessment.¹²³

Rubrics

Rubrics are “descriptive scoring schemes” created by educators to guide analysis of student work¹²⁴ that are often employed when educators must judge the quality of performances or constructed-response items.¹²⁵ In fact, rubrics are ubiquitous in educational assessment and offer substantial benefits to librarians conducting assessment of information literacy skills and library instruction.

The benefits of rubric assessment are numerous.¹²⁶ Rubrics have instructional advantages over other assessment approaches, including the direct benefits to students, the benefits of stating agreed upon values, and the benefits of detailed

result data. Popham states, "A properly fashioned rubric can help teachers teach much more effectively and help students learn much more effectively, too."¹²⁷ Pausch and Popp suggest that rubrics are more valuable for learners than other assessment tools because they emphasize "understanding rather than memorization, 'deep' learning rather than 'surface' learning."¹²⁸ Most importantly, rubrics benefit students in several ways. First, rubrics allow students to understand the expectations of their instructors. Second, rubrics provide direct feedback to students about what they have learned and what they have yet to learn. They also can facilitate student self-evaluation. Finally, rubrics are used to make rankings, ratings, and grades more meaningful by revealing what educators expect students to know or do.¹²⁹

Rubric assessment provides another important instructional benefit—the opportunity to discuss and determine agreed upon values of student learning. Callison writes, "Rubrics are texts that are visible signs of agreed-upon values. They cannot contain all the nuances of the evaluation community's values, but they do contain the central expressions of those values."¹³⁰ Stevens and Levi list the facilitation of communication with others as a key reason to use rubrics.¹³¹ Bresciani, Zelna and Anderson confirm that rubrics "make public key criteria that students can use in developing, revising, and judging their own work."¹³² They also point out that once rubrics are developed, they can be used to norm educators' expectations and to bring them in line with the original vision for student learning.¹³³ They can also be used to make students full participants in the assessment process. Rubrics allow the possibility of including students in the development of standards for a product or performance.¹³⁴ Bernier points out that "helping teachers create rubrics helps students meet those content standards."

Rubric assessment offers a third instructional benefit—data full of rich description. Rubrics provide "evaluators and those whose work is being evaluated with rich and detailed descriptions of what is being learned and what is not."¹³⁵ This descriptive data can be used to document how educators or program administrators improve instruction.¹³⁶ Furthermore, the data that results from rubric assessment is so detailed and well-defined that it "combats accusations that evaluators do not know what they are looking for in learning and development."¹³⁷ The level of detail found in rubrics helps prevent inaccuracy of scoring¹³⁸ and

bias.¹³⁹ Rubrics clarify schemes for assessment ahead of time, and therefore reduce subjectivity in grading.¹⁴⁰ Since rubrics guide teachers to focus on essential criteria,¹⁴¹ they can grade student products and performances more easily and objectively.¹⁴² Callison indicates the importance of this benefit for librarians, stating that rubric assessment "is more likely to be reasonably objective and consistent from lesson to lesson and from student to student, especially useful in team teaching situations that involve collaboration among library media specialists and other teachers."¹⁴³ Because rubrics are easy to use and easy to explain, they also generate data that is easy to understand, defend, and convey.¹⁴⁴

Like other assessment tools, there are limitations associated with rubric assessment. Many of the limitations of a rubric approach to assessment are rooted in poor rubric construction. Not all rubrics are well-written,¹⁴⁵ and crafting a good rubric requires time, practice, and revision.¹⁴⁶ Tierney and Simon caution that, unfortunately, "the most accessible rubrics, particularly those available on the Internet, contain design flaws that not only affect their instructional usefulness, but also the validity of their results."¹⁴⁷

Another limitation of rubric assessment is time. While creating rubrics is inexpensive monetarily, some teachers find the process time-consuming.¹⁴⁸ Part of that perception might be due to lack of familiarity or expertise; teachers don't always know how to make a rubric and so they believe the process will take too much time.¹⁴⁹ Prus and Johnson acknowledge the potential cost of time required to create a rubric, but feel that the advantages outweigh the costs.¹⁵⁰ They write: "As in virtually all other domains of human assessment, there is a consistently inverse correlation between the quality of measurement methods and their expediency; the best methods usually take longer and cost more faculty time, student effort, and money."¹⁵¹ Stevens and Levi argue that rubrics actually make grading easier and faster by "establishing performance anchors, providing detailed, formative feedback, . . . supporting individualized, flexible, formative feedback, . . . and conveying summative feedback."¹⁵²

Conclusion

Although selection of an assessment method may seem a daunting task, it is one that can be guided by criteria for selection and best practices. Librarians attempting to select assessment methods

must understand the strengths and weaknesses of various techniques.¹⁵³ They also must consider the types of information that various techniques provide, and whether or not the methods they select will answer the questions they have about their library instruction programs.¹⁵⁴ Ultimately, the choice of assessment comes down to a fit between the purposes of assessment and the capabilities of assessment methods. As Grassian and Kaplowitz point out, "An assessment method is neither good nor bad in its own right."¹⁵⁵ Success in assessment is simply a matter of selecting the right tool for the job.

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Choosing the Best Tools for Evaluating Your Library

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Abstract

Numerous library assessment tools are available today with proven validity and reliability. It is difficult to know if one has selected the *best* tool to build one's assessment case given one's unique circumstances. Answering the following series of questions will provide guidance. The questions are:

- 1) Why are we evaluating?
- 2) Who will use the results?
- 3) Do we have baseline or do we need to establish one?
- 4) What will this tool tell us and what is the precision of its measurement?
- 5) What new information will we gain?
- 6) What are the initial and continuing costs for using this tool?
- 7) What are the staffing requirements and what new operational knowledge does the staff gain?
- 8) Will the assessment resonate with and help support the goals of the library's parent organization?
- 9) How will the findings be used by the library's parent organization?
- 10) How might the findings from the assessment be used *against* the library?

Tactics for answering these questions are provided, accompanied by graphic illustrations of the different paths one can take in the choosing the best library assessment tools for particular circumstances.

Introduction

Numerous library assessment tools are available today with proven validity and reliability.

However, the answer to the librarian's question "Which of these tools should I use to demonstrate how the library adds value to our parent organization?" is not available. Answers to the following questions can provide an informed basis upon which to select the tool best suited for a given circumstance. Figure 1: Decision Flowchart for Selecting Library Assessment Tools is provided to help illustrate this network of questions and their relationships to each other.

A conceptual model, (Figure 2: Strategic Points for Library Performance Measurement), illustrates and provides examples of evaluation measures and the general points at which measures are taken. Tools for evaluating libraries are defined broadly and run the gamut from input counts to evaluation of a program's impacts. They can be either quantitative or qualitative and measuring the number of new books added to a collection or the funds expended for those books in a year. It could be the way library customers feel about the service provided by library staff. The tool could calculate a rate of return on investment that derives from a public library or the impacts a university library's programs has on students understanding about intellectual property rights. Integrated systems of evaluations such as the *balanced scorecard* which are being used by libraries are also included.

Today there are many evaluation tools being tested and utilized by libraries around the world. Examples of some of these are provided in Figure 3: Library Assessment Environment, 2006. Some of the organizations working in these areas are also noted in this figure which provides examples and is not comprehensive.

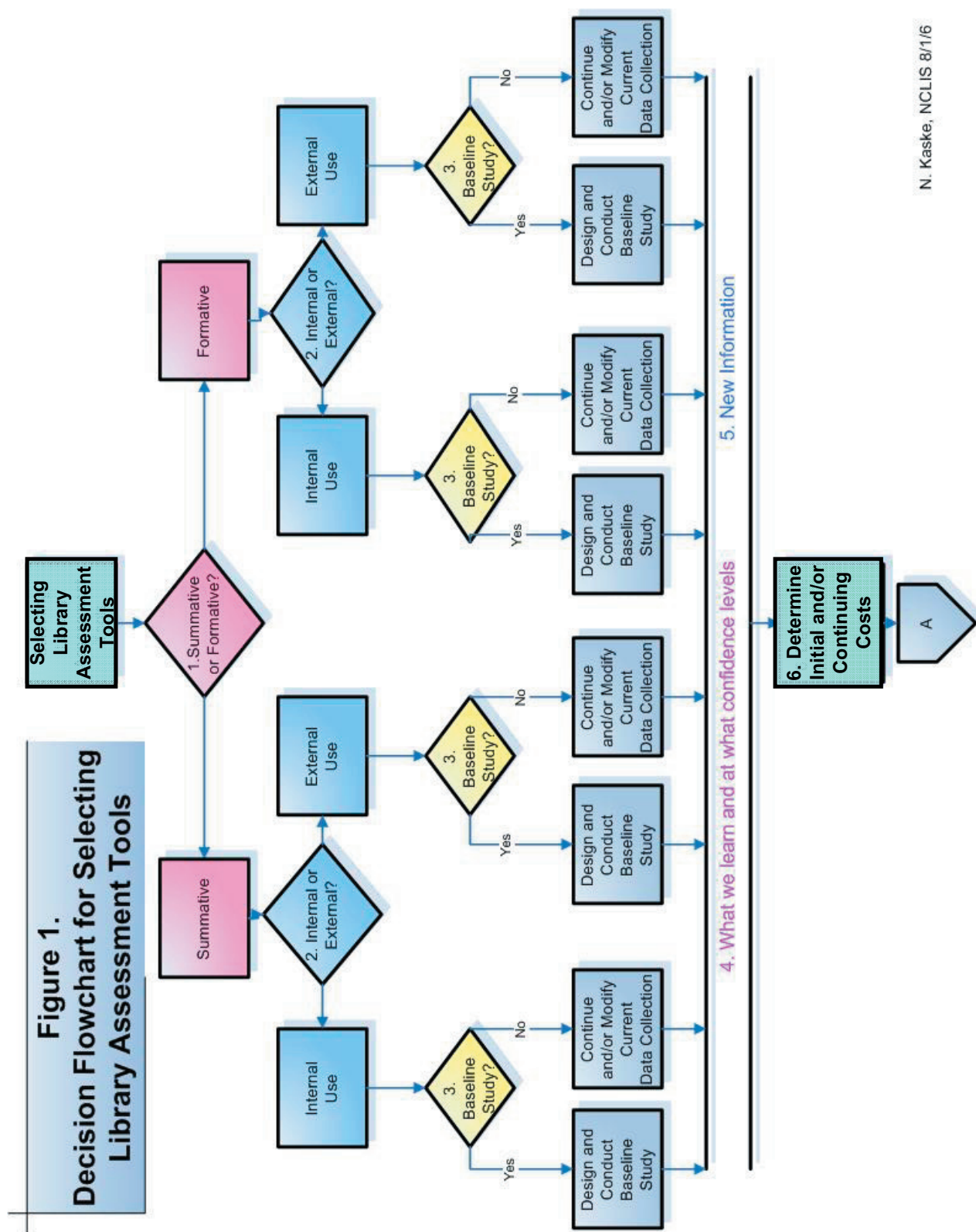


Figure 1.
Decision Flowchart for Selecting
Library Assessment Tools
Page 2

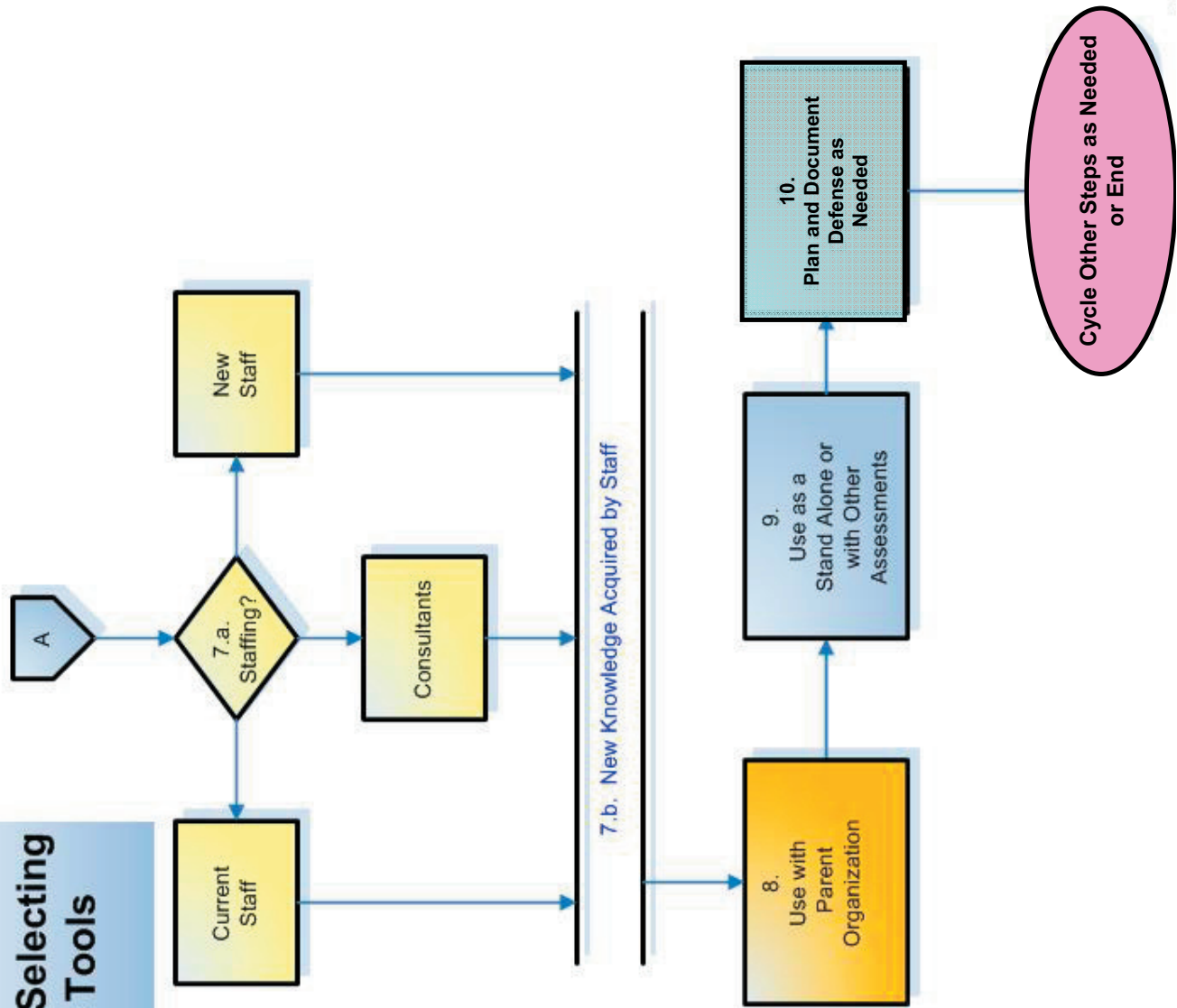


Figure 2.
Strategic Points for Library
Performance Measurement

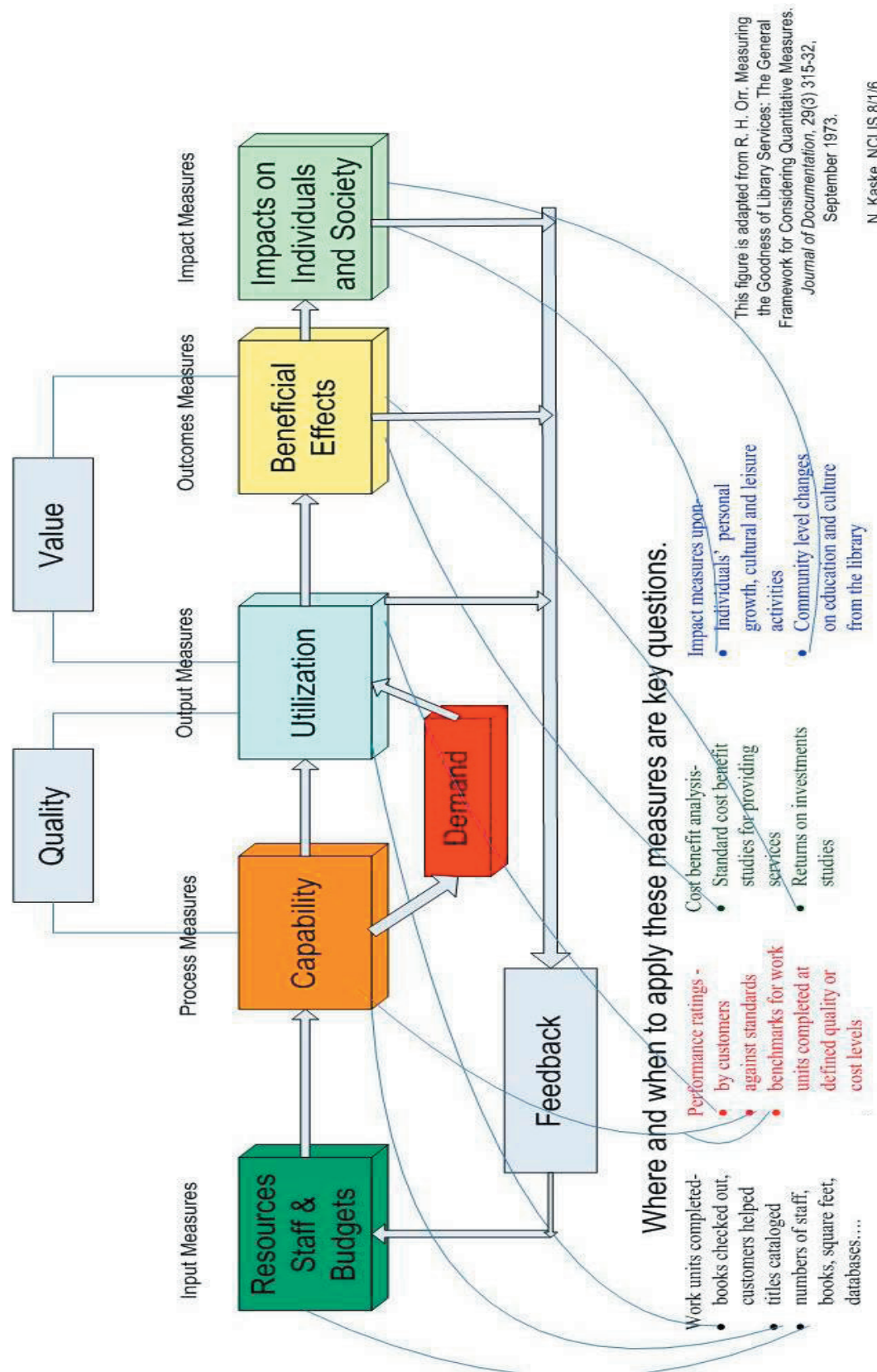
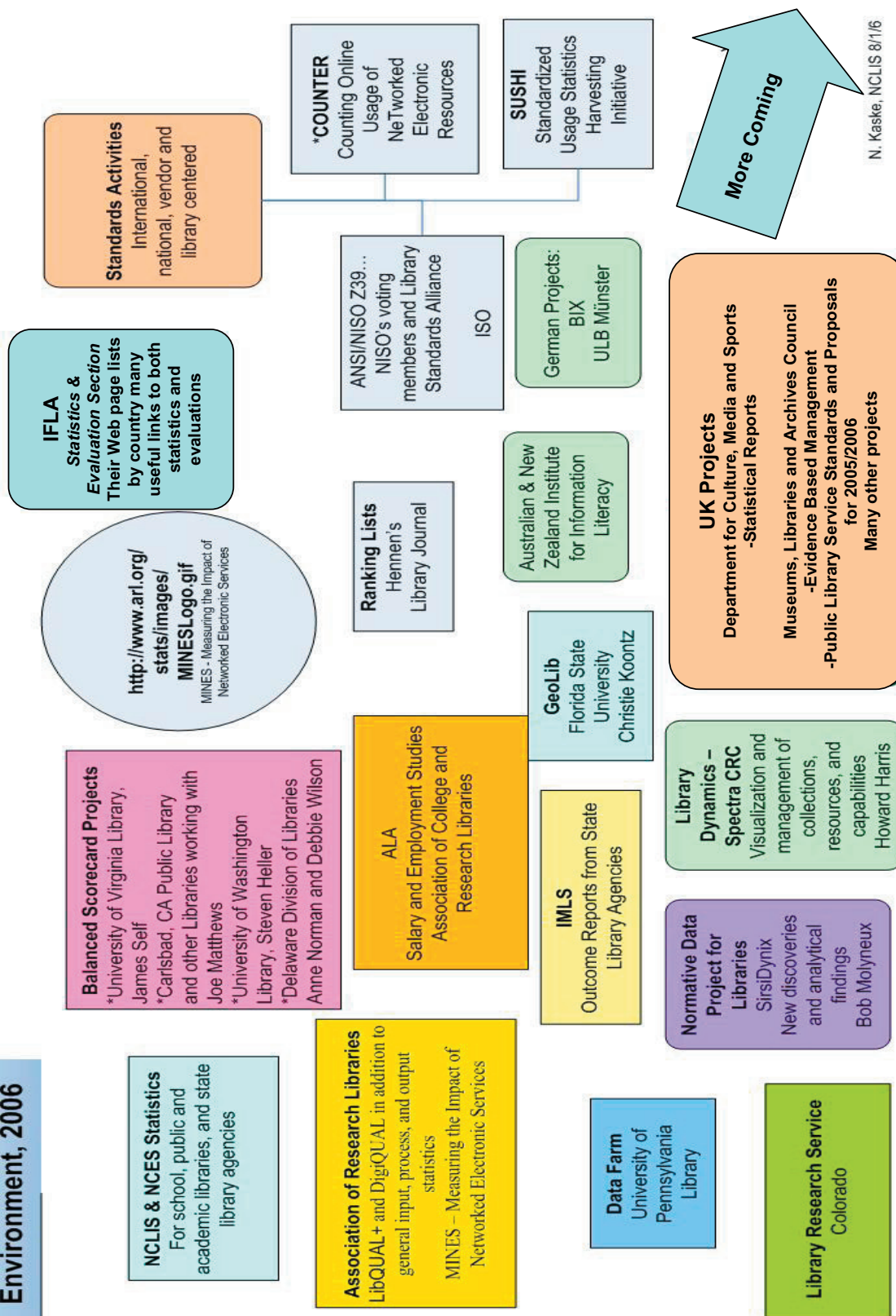


Figure 3.
Library Assessment
Environment, 2006



1) Why are we evaluating?

Is it for a one-time go or no-go decision? This form of evaluation is known as a *summative evaluation*. It is conducted at the end of a process. Examples of summative evaluations are: reviewing a librarian for tenure, deciding to discard or retain titles in the collection, deciding whether to select a new integrated online library system or to staying with the current system, or deciding whether to build an additional branch library now or put the decision off for two years.

Is it for an ongoing evaluation done to monitor a service or process with the goal of improving the service or process? If the goal is improvement, then it is a *formative evaluation*. Examples are: ongoing improvement of a library's Web page, fine tuning the collection development plan for higher circulation of items, or increasing the satisfaction level of customers making use of the children's collection.

The differences between summative and formative evaluations are critical. For an in-depth discussion on the differences a number of sources are available from an informal encyclopedia like Wikipedia¹ to a formal text such as *Evaluation: Methods for Studying Programs and Policies*.²

2) Who will use the results?

Is the user internal or external? If the findings will be used as an error check for a process in order to assure high quality standards, then the evaluation may be conducted by staff members. However, if the findings will be used to build a case with the Mayor or the VP for Academic Affairs to justify an additional branch library then data collection and methods for communicating the results will be done differently. In the first case the information on errors will be passed to those who can correct them in an efficient and effective manner. In the second case, the information may be collected and analyzed by a group of library and Mayor or VP for Academic Affairs Office.

The audience and intended use are important factors to consider from the planning prospective and for the means to be used to communicated and hopefully act upon the results. We need to be clear about who will use the findings and if their utilization will be within the library or external. If we do not recognize this, we could have outsiders using seeming low production numbers to assert that the library is an inefficient operation and thus an ineffective organization.

3) Do we have a baseline or do we need to establish one?

Baseline for our purpose means a quantity or value known to us and from which we can compare new quantities or values for some task or activity. Examples of baselines are the number of copy cataloged items produced per hour, average number of customer complaints per month, the level of shelving mistakes per 1,000 books made by staff members, and the number of new books stolen per year. Baselines are used to answer questions such as "Did the copy cataloger produce above or below standard last month?" and "Does the library have a 'stolen books' problem from its current circulating collections?" The lack of baseline data prevents us from being able to say we have a productive copy cataloger and we do not have a stolen books problem. To answer the stolen books question we need to know when the books were stolen to determine an annual loss to calculate if a security system would be cost effective. An inventory of only items added to the collection from 1 January 2005 to 31 December 2006 would not inform us about the loss of items added before 1 January 2005 which are a part of the collection. There are cases where the productivity or losses are so great that it is clear to all there is a problem. For example, all the new books on a popular subject are missing and the copy cataloger is only doing four titles per day. Normally we establish our own baselines but there are cases where those established by similar libraries or related organization can be used.

4) What will this tool tell us and what is the precision of its measurement?

This question is complex. In the first part of the question we need to learn if the tool is valid and reliable. That is, it measures what it is supposed to measure (validity) and it measures it consistently (reliability). We also need to use the tool correctly and for the purpose for which it was intended. If we have a valid and reliable questionnaire that assesses customers' willingness to purchase a given new item or service it may not work to gauge current library customers' willingness to use a new service. Why not? It is because the assessment tool was designed to test peoples' willingness to pay for a new service or product directly, not indirectly as they pay for library services. The cost for the proposed new library service is in our property taxes or tuition. We need to take care to understand

and make sure the assumptions for the models and tools we use are applicable to our situation.

The precision part of the question addresses the choice of looking at a sample or the population. When looking at the total population, we do not need to generalize because we have a full census. Samples however have a level and interval of confidence. When we see the results of a poll or study reporting 80% of the people believe a given way with a confidence of $95 \pm 5\%$ we know this means if conducted 100 times the results 95 times would be between 75 and 85 ($80 \pm 5\%$) and 5 times the results would be greater than 85 or less than 75. Sampling statistics make assumptions about the underlying distribution which also must be acceptable in a given situation. To gain an understanding of these concepts taking a basic statistics class and consulting online statistical labs such as the Rice Virtual Lab in Statistics are recommended.³

The questions “*Do we sample?*” and if so, “*How large a sample?*” must be addressed as well as the question of level and interval of confidence. Question 4 has many aspects which can be summarized by knowing the purpose of the tool, its validity and reliability and its underlying assumptions. Understand and utilizing the findings in accordance with the level and interval of confidence dictated by the sample size and its underlying distribution assumptions are also essential.

5) What new information will we gain?

Will this be new information or just newly formatted old information? If the information we are collecting is not new, then we should not be embarking on the effort. Or if the data turn out to be highly correlated to data we are already collecting then we should consider dropping one of the data collections. The cost of data collection and analysis is usually too high to collect redundant data for any length of time beyond verification that the data are redundant. We also should not be embarking on the effort if we do not know how we are going to use this new information in our decision making. The information just being ‘interesting’ is not a good reason to collect, analyze, report, and otherwise support an assessment effort.

The new information should add to our understanding of the current environment or provides insight into library operations. A basic question to answer when determining if we have something new is to ask if the information helps us

demonstrate that the library adds value to our parent organization or permits us to manage the library for effectively and efficiently.

6) What are the initial and continuing costs for using this tool?

Initial costs or first-time costs are those of selecting, purchasing, placing, and starting up the use of a new evaluation tool. For example, costs associated with a new system for control and monitoring of database use are initial or first-time costs. This new tool is to help us evaluate use and to permit us to maximize the dollars expended on databases.

Continuing costs or recurring costs are those that accrue from using the new tool. If it makes us more productive—accomplishing more in the same or less time—then it should pay for itself and save money over time. However, if the new tool gives a few additional reports that are of little or no value and require more staff time then it could be a poor decision for one key reason. The costs for the new tool are greater than the value of the additional information and useful knowledge gained. A word of caution, in many cases the initial cost are low and the possible saving from use look promising but there are many elements of the continuing costs we do not see at first. Take care to clearly understand the total cost of your new evaluation tool.

The classic *initial vs. continuing costs* problem can be expressed by the decision to purchase a hybrid vs. a standard gasoline fueled automobile. Generally, the hybrid car has a higher initial cost but lower continuing costs. However, this is all subject to the assumptions made. These would be the expected life of the car, how long it would be retained, fuel and repair costs, and the expected value of the car when sold or traded. These assumptions are fundamental elements and should always be expressed explicitly. This is especially true in our highly computerized library environments with the complex human-computer interaction to consider. For example the amount of staff time to be saved turns may turn out to be a false assumption. When implemented the new efficient process has dumbed down the job, resulting in lower morale and productivity. We should remember to test assumptions with all staff affected to limit unattended consequences.

7) What are the staffing requirements and what new operational knowledge does the staff learn?

To answer these questions we will need to ask some additional questions.

Staffing requirement:

- Will the new assessment tool require staff training?
- Will current staff be able to accommodate the additional workload or will overtime or temporary staff be required?
- Will specialized staff such as a consultant be required?
- If the work is specialized and requires a consultant then that person will require selection and supervision as will the temporary staff.

Operational knowledge acquired by staff:

- Will the new knowledge help staff provide better service or a capability to make more informed decisions?
- Will the library organization be able to retain and utilize this additional knowledge if temporary staff or a consultant is used?
- How will the new operational knowledge be transferred to permanent staff?

Given that library organizations must learn if they are to survive in our ever changing environment, the question of who gains this new operational knowledge and how it is shared in the library becomes critical.

8) Will the assessment resonate with and help support the goals of the library's parent organization?

So, what has the library and its staff done for us lately? The answers to these questions are critical for the vast majority of libraries as few libraries stand as independent organizations. The city, county, school, cooperative, or university administers who oversees the library needs this question answered in a clearly understandable way. These administrators need to see how the library adds to the city's economy, the educational achievements of the students or to the company's bottom line. The individuals that use the library and its services may benefit from this information. Having customers aware the library is providing effective and efficient services will clearly help in demonstrating the library organizations and their staffs add value to the parent organization, be that a city, academic, or business establishment. Accountability is increasingly the norm. Just because people love books and libraries is no reason to fund libraries. The administrators must see

the added value coming from the library's collections and services.

If the information from the new evaluation tool does not resonate with the parent organization then we must ask, is the tool needed for internal use? If the answer to this question is a clear yes and not "it would be nice and the information would be interesting to know" then it may be a reasonable addition. Be careful of redundant measures and ones of only passing interest. Remember resources are finite.

9) How will the findings be used by the library's parent organization?

Packaging the message from the assessment is critical. *Is this assessment a one off or is it a part of a set? Can the parent organization incorporate the library's assessment as part of its budget or 'legislative' case?* If yes, then it is a useful assessment. But if no, your assessment may be seen as superficial, unscientific, or just library *mumbo jumbo*. Demonstrating the value of a library to the parent organization is a critical step because administrators must explain and understand the value added by library collections and services to their board of directors and their customer base. Some of the most effective library advocates are school principals, college presidents, city managers, mayors, and CEOs of business organization.

10) How might the findings from the assessment be used *against* the library?

It will not matter if your measure was for *internal use only* if it is used by someone to make the library appear poorly managed or ridiculous. To prevent this, one needs to take care in the methods of recording and reporting assessment data. Secrecy is not being suggested, quite the contrary. Evaluation should be open as long as individual workers rights are protected. One needs to create, build and maintain a culture of assessment. This is no easy task and is the subject of many articles and books. Findings should be presented in relation to past performance and established strategic goals and objectives for the library and in some cases the parent organization too. For example an assessment of the library's information literacy programs shows that professor are requesting 35% more classes is year over last year. Expanding this effective program will require additional funding. Demonstrating cause and effect is difficult but reasonable correlations, well articulated, suggest the need for additional funding. This is where the

success is making decisions based on the best qualitative and quantitative information available by using reliable evaluation tools. Without solid information it is just BS—boastful statements.

Final Comments

The questions offered in this paper about choosing of best evaluation tools for library assessments are numerous and sometimes complex. However, once answered, the tasks related to evaluation and the use of the findings should help us all demonstrate that library adds value to our parent organizations

and society as a whole.

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Endnotes

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Developing Best-Fit Evaluation Strategies

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Abstract

This paper examines and describes best-fit evaluation strategies based on local situational contexts for libraries. This paper examines key issues and factors that appear to be associated with developing best fit evaluation efforts based on specific situational contexts, drawing upon the lessons and findings from a range of library evaluation projects. This paper then presents future directions for the development and implementation of best-fit evaluation strategies for libraries and specific recommendations for implementing a best-fit evaluation strategy in library settings.

Library decision makers need to know the impacts, benefits, and value of library services and resources provided to the communities they serve. To identify these, library practitioners and researchers need best-fit evaluation strategies designed to provide data that describe and report impacts, benefits, and value in terms of the unique needs within specific situational contexts of individual libraries.

To understand the impacts, benefits, and value of library services and resources, library decision makers must select evaluation strategies appropriate to targeted data needs within specific situational contexts.

Library decision makers are often faced with difficulties matching their data needs with the appropriate evaluation approaches. There are many different kinds of evaluation data that a library may need and evaluation approaches that a library

might employ. As a result, many libraries struggle with the problem of choosing the best evaluation approaches to effectively and efficiently demonstrate the value they provide. The development of best-fit evaluation strategies would significantly help to address such issues.

Introduction

Library facilities, resources, and services provide substantial value to their communities; however, libraries increasingly find themselves under pressure to quantify the value they provide and the impacts they have on their patrons to library boards, local governments, community institutions, educational institutions, state legislatures, funding agencies, and private donors. For many years, libraries were an assumed public good, and the funding of libraries was primarily viewed as a necessary expense to ensure public access to information and educational materials.¹ Changes in government philosophy and policy since the 1980s, however, have altered the political climate for libraries. Many libraries are now required to provide justification for the funding they receive and the benefits that they offer to their communities.²

In this environment, libraries need to measure use, demonstrate effectiveness and efficiency, determine quality and usefulness, estimate value, and assess impacts of the services and resources provided by the library. The challenge to libraries in quantifying value, assessing impacts, and

addressing other information needs is the selection of best-fit evaluations that match data needs within specific situational contexts. Best-fit evaluation strategies involve matching the data needs of a library within a specific situational context to the evaluation approaches that are most appropriate to that particular situational context.

Little research to date has provided comprehensive assistance in the determination of what specific evaluation approach or approaches serve libraries best relative to specific library situational factors, data needs, and a host of other considerations. With so many evaluation options available, there is a need to bridge information need issues (i.e., situational factors, data needs, stakeholder questions, etc.) with evaluation approaches. Understanding information needs and linking these needs to evaluation approaches requires evaluation strategies capable of providing library practitioners and researchers with data that library decision makers can use to address specific problems. Identifying issues and factors that affect evaluation will provide researchers and practitioners with understanding and guidance in the selection of best practice assessment techniques to best meet their needs.³

This paper examines and describes considerations for the development of best-fit evaluation strategies based on local situational contexts for libraries. The paper examines key issues and factors that appear to be associated with selecting evaluation strategies based on specific situational contexts, drawing upon the lessons and findings from a range of library evaluation projects. The paper then presents future directions for the development and implementation of evaluation strategies for libraries.

Evaluation Context

With the growing importance of the provision of online library services and resources, there is a need to establish methods by which to evaluate and measure the performance of library Web sites, the information they contain, and the services they deliver against set standards. Evaluation can play both a formative role, helping to continually refine and update goals, objectives, and services; and a summative role, helping to ascertain whether the goals and objectives are being met.⁴ Evaluation can also provide insight into whether a program is more effective and efficient as a physical program or as a technology-driven program.⁵ As identified in ensuing sections of this paper, all of these issues

have implications for the evaluation of digital libraries.

A review of the research literature shows that library researchers and practitioners currently engage in a range of evaluation strategies in attempts to answer questions regarding the value, impact, and benefits of library services, resources, and programs. There are a number of *how-to* manuals, tool kits, and other forms of assistance that provide details on evaluating services, resources, and programs. These manuals fall largely into four identifiable, selected key evaluation approaches that include outputs assessment, performance measures, outcomes assessment, and quality assessment.⁶

In addition, more recent research has focused on an approach developed within the private business sector, the balanced scorecard methodology.⁷ A number of further studies have sought to create frameworks for researching or assessing a library's networked environment.⁸ Additionally, from a methodological standpoint, the right combination of multiple approaches is important. Multi-method approaches can facilitate the development of innovative evaluation methods in the networked environment.⁹ When used in a combination of methods that simultaneously provide different types of data and are complimentary to one another, the use of multiple evaluation approaches can provide insights would not otherwise be found.¹⁰

The library community in general, however, has little guidance, about which evaluation strategies and approaches will provide the best data, have the greatest impact for improving library services, or enable libraries to better advocate the value of libraries to their institutions or to the communities they serve. It is essential, therefore, to provide library researchers and practitioners guidance as to:

- What evaluation approaches are available;
- Which evaluation approaches might best meet their data needs, either library developed or imposed by external funders/organizations/etc.;
- How to develop an overall evaluation plan that makes effective and efficient use of limited library resources;
- How to implement an evaluation strategy; and
- How to use evaluation findings to advocate for local library support.

In addition, there is little or no guidance offered

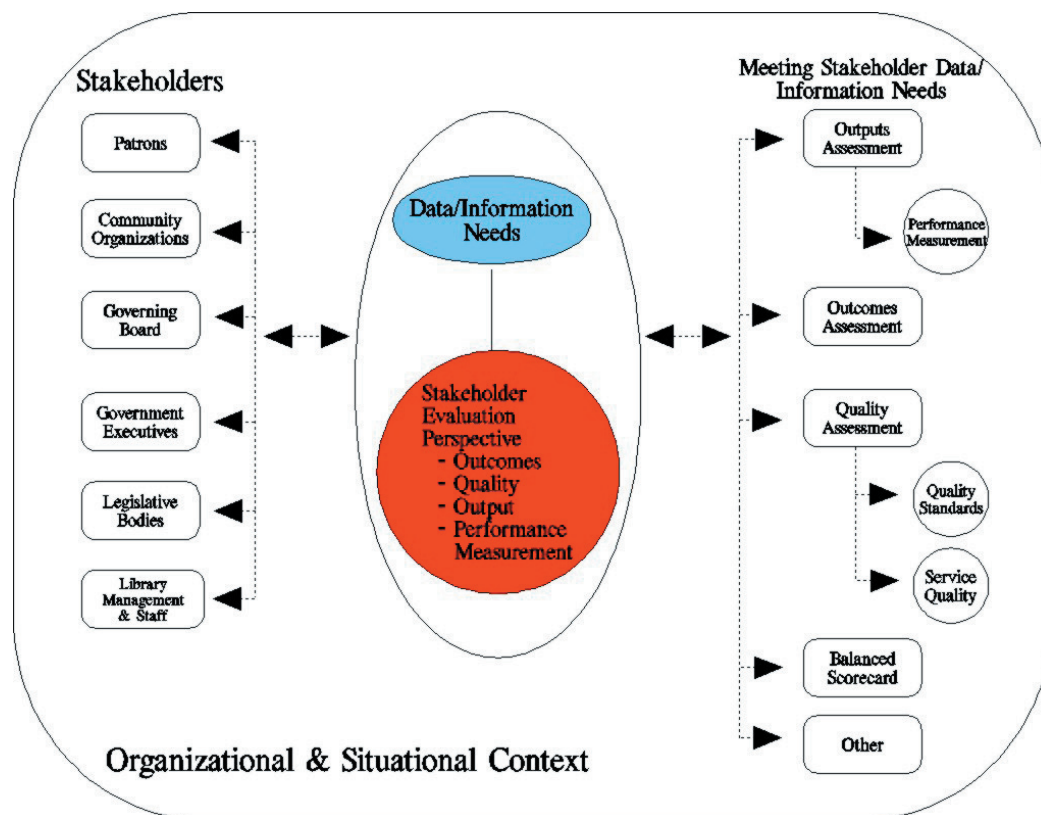
to link data needs to specific evaluation approaches to library organizational and situational contexts.¹¹ The development of best-fit evaluation strategies would significantly help to provide guidance in the selection and use of evaluation approaches to address evaluation issues.¹²

Library Evaluation Conceptual Framework

Library researchers and practitioners typically consider differing motivations to meet information needs from one or more of three different

perspectives: stakeholder type (i.e., who is requesting certain data); data or information need (i.e., what data are necessary or sought); or evaluation approach selected to meet stakeholder data/information needs (i.e., outputs evaluation, outcomes-based evaluation, etc.).¹³ Figure 1 represents the conceptual framework that illustrates stakeholder evaluation perspectives (user- and library-centered) and data/information needs used to meet those needs (center) in terms of stakeholders and specific evaluation approaches.

Figure 1: Library Evaluation Conceptual Framework (Bertot & Snead, 2005)¹⁴



Prior and ongoing research suggests that practitioners and scholars have developed and/or adapted a number of evaluation approaches to facilitate the management of library services and resources.¹⁵ Initial research indicates that most prevalent among these evaluation strategies are those that rely on output assessment, performance measures, outcomes assessment, and quality assessment.¹⁶ Into this mix is an emerging evaluation approach that borrows from output, outcomes, and quality assessment efforts known as the Balanced Scorecard.¹⁷

There are multiple motivations for library evaluation efforts from a diverse group of library stakeholders. Such motivations can include questions prompted by stakeholders, internal management needs, and requirements of funding agencies, for example. A key issue is that these approaches may or may not provide data necessary to:

- Answer a range of questions asked by various stakeholders groups (e.g., library boards, county or city executives, funding agencies, library patrons, state library agencies) regarding library services and resources; or

- Make informed decisions regarding a library's range or availability of services and resources.

Additionally, without an understanding of specific situational factors related to effective and efficient evaluation, libraries may not be able to conduct the most useful and informative types of evaluation or successfully demonstrate impacts of the services and resources they provide to the communities they serve or demonstrate accountability to funding organizations.

Moreover, libraries may engage in only one form of assessment (such as output assessment) to answer service/resource questions of various community stakeholders, regardless of whether the assessment is most appropriate for a specific inquiry. As such, there are several compelling reasons for libraries in the networked environment to employ evaluation approaches. Evaluation can provide the data necessary to:

- Answer a range of questions asked by various stakeholders groups (user-centered evaluation perspective);
- Make informed decisions regarding a library's range or availability of services and resources (library-centered evaluation perspective);
- Demonstrate value and effectiveness of the library to the community that it serves (community-centered evaluation perspective);
- Frame the perceptions of the library in the local political environment (political context-centered evaluation perspective); and
- Support the notion of the library as serving as a public good (customer-centered evaluation perspective).

Each of these roles for evaluation can be of great benefit in demonstrating the value, effectiveness, and importance of libraries, while also advocating for funding and other support for libraries.

With the data and analysis completed, libraries can employ the data to answer stakeholder concerns and meet user needs; make decisions about library resources and services; demonstrate value of the library to the community; help the library have a voice in the political environment; and support the role of the library as a public good and demonstrate its value.

Library decision makers are often faced with difficulties matching their data needs with the appropriate evaluation approaches. There are many different kinds of evaluation data that a library may need and evaluation approaches that a library

might employ. As a result, many libraries struggle with the problem of choosing the best evaluation approaches to effectively and efficiently demonstrate the value they provide. The development of best-fit evaluation strategies would significantly help to address such issues.

Issues, Factors, and Selection of Best-Fit Strategies

The rewards from evaluation can include the ability to describe and understand the impact, benefits, uses, and user satisfaction with library services and resources. The perils of poor evaluation range from wasting finite library resources to providing useless data that are incapable of answering questions about library services. Due to this, there are a number of issues and factors to consider in the selection of evaluation strategies.

Issues in the Determination of Best-Fit Evaluation

Issues researchers and practitioners should consider in the development and implementation of a *best-fit* evaluation strategy includes:

- Success with which libraries are currently employing a number of different evaluation approaches;
- Problematic evaluation efforts in libraries (i.e., historical but outdated efforts, mismatched evaluation efforts to data needs);
- How library situational factors (organizational, community, other) affect the successful use (or unsuccessful use) of leading evaluation approaches;
- Library preparedness to engage in evaluation efforts; and
- Types of evaluations available for use, including the data each evaluation approach might produce, the strengths and weaknesses of each evaluation approach, and potential applications of each evaluation approach within varying library situational settings and contexts.

Examining these issues can facilitate the use of the most appropriate evaluation strategy available to meet data needs and to demonstrate library community impact and value.

Factors in Determination of Best-fit Evaluation

Minimally, the factors to consider in the selection of a best-fit evaluation approach include the

following:

- Purpose of the evaluation;
- Type of data needed;
- Knowledge and skills of library staff related to evaluation, data collection, data analysis, and data reporting;
- Degree of difficulty associated to understanding/implementing a particular evaluation approach; and
- Organizational and situational factors related to the library (such as available resources), its community, and its political/governing context.

In short, the selection of a best-fit evaluation approach requires the determination of what type of evaluation approach will best meet the library's evaluation purposes and needs given the library's current situation. Without a good understanding of the factors related to conducting successful evaluation, the most useful types of evaluation may not occur.

Selection of Best-Fit Evaluation Strategies

Library decision makers need be able to select the *best* evaluation strategy given the:

- Specific program, service, resource use, or other item being evaluated;
- Situational factors unique to that library and its setting;
- Evaluation goals to be accomplished;
- Motivation for the evaluation;
- Availability of various data sources;
- Availability of staff and other resources for the evaluation;
- Diverse populations represented within the communities served by the library;
- Governance factors;
- Extent and availability of library resources to support the strategy; and
- Intended audience of the evaluation.

To understand the impacts, benefits, and value of library services and resources, library decision makers must select evaluation strategies appropriate to targeted data needs within specific situational contexts.

In considering types of evaluation to target data needs, developers conduct a number of data collection activities related to library evaluation needs and in order to identify current best practices regarding library assessment. The purpose of

conducting these data collection activities (see examples above) is to find which evaluation frameworks work best in meeting the decision making and reporting needs of libraries.

This is done by studying the application of various evaluative frameworks within a library setting, identifying the circumstances and situational contexts as they existed within the libraries during the application of these frameworks, and determining the degree of the effectiveness of the application of these frameworks in meeting the decision making and reporting needs of the libraries.

Future Directions of Study

The evaluation of library services requires effort, knowledge, and an investment of time and resources. Increasingly, evaluation requires the use of multiple methodologies (i.e., surveys, focus groups, log file analysis, etc.) and the coordination of data collection efforts, data analysis, and the presentation of findings to numerous stakeholder groups (i.e., library board, city council, others).

As a result, many libraries struggle with the problem of choosing the best evaluation approaches available that can effectively and efficiently assess services and programs they provide and the use of resources in providing the services and programs. Research, however, offers a number of potential directions for future study to continue to help libraries with evaluation of their services and use of resources.

Resource-based Process

A central challenge in libraries is the difficulty of quantifying the value of resources to individual users in the community, particularly when such resources are provided in both physical and electronic formats. Libraries today exist within a dual environment that is a mix of:

- Physical brick-and-mortar setting where traditional services and resources are offered to library patrons; and
- Rapidly expanding networked environment where traditional brick-and-mortar services and resources (i.e. circulation, reference, collections, databases, etc.) have evolved and are increasingly offered through a library's Web site.

Operating within this dual environment, additional research is needed to assess the use and allocation of resources in both the traditional and the

networked environments.

Problem-Based Process

Libraries are often asked questions regarding the quality and the impact of services and resources they provide. Library researchers and practitioners typically must engage in a number of evaluation strategies to attempt to answer these and other questions regarding library services, resources, and programs—sometimes through systematic evaluation programs, other times through ad hoc evaluation efforts.¹⁸ More research is needed to link specific questions or problems that libraries face or are trying to address to data needs and best-fit evaluation approaches which will address the problems and questions which libraries identified.¹⁹

Multiple Evaluation Process

There are a number of approaches for researchers and practitioners to consider when evaluating library services and resources. Using digital libraries as an example of library services, there is a need to consider:

- A design which tailors the evaluation to the library's circumstances fits the information needs of the primary audiences for the evaluation, and address a real, known need.²⁰ Evaluation design, planning, and execution are essential to fruitful evaluation efforts.²¹
- Multiple evaluation approaches, tools, and techniques are possible to employ in the evaluation of digital libraries. These can range from measures of performance and outputs (e-metrics) to measures that focus on users such as service quality, outcomes, functionality, usability, and accessibility.²² Given the approaches available to digital library evaluators and managers, it is important to select the most appropriate evaluation approach or approaches that best meet their informational needs.
- One evaluation technique may not meet the informational needs of researchers or digital library managers. It is more likely the case that there is a need to engage in multiple evaluation techniques to yield a comprehensive picture of a digital library's impact(s) on its user community.²³

The protocols and methods aimed at the evaluation of digital libraries, and the implementation of such protocols and methods, will need to continue to evolve over time to meet the changing digital

library landscape, goals and objectives of specific digital libraries, and evaluation needs of researchers and practitioners.

Unanticipated Factors

Library evaluations may also need to be designed to better account for library services in relation to external pressures placed on libraries that may be unanticipated or the result of unforeseen events. Two recent examples of such unanticipated factors can be found in the significant roles that libraries played in helping communities cope with the aftermath of hurricanes in 2004 and 2005 along the Gulf Coast²⁴ and in delivering access to, training for, and assistance with e-government services to diverse patron populations, often at the instructions of government agencies.²⁵ In such cases, libraries are providing benefits and impacts to their patrons, their communities, and governmental agencies, while also expending resources, in ways that were unplanned. However, such impacts and costs need to be accounted for in evaluations. More research is needed to understand the impacts and costs of such unanticipated factors, as well as the best ways to design evaluations that incorporate these factors.

Other Factors

Effectively using resources and using evaluation to account for the use of those resources are pressing issues for libraries. Being able to articulate library impact, value, quality, and other benefits of publicly funded services and resources can enable librarians and managers to demonstrate what libraries do for the communities they serve.

Evaluation approaches, however, may not always be the best method to understand impacts, value, and quality of a library. There may be other factors that affect the benefits of library services and resources, such as issues involving literacy (traditional, information, and technology), or the affects of economic and social factors. To fully evaluate a libraries services and use of resources, more research is needed to identify the potential impacts of these other factors.²⁶

In addition, library researchers and practitioners typically engage in a number of evaluation strategies to attempt to answer questions regarding effectiveness or efficiency of library services and resources—sometimes through systematic evaluation programs, other times through ad hoc evaluation efforts. As mentioned earlier, evaluation can provide useful data capable of describing and understanding the impact, benefits, uses, and user

satisfaction with library services and resources. The perils of poor evaluation, however, can actually waste finite library resources, provide useless data, and be incapable of answering questions about library services. Additional research is needed to identify poor evaluation practices as well as to develop best-fit evaluation practices.²⁷

Conclusion

Libraries continue to engage in a wide range of evaluation efforts in order to determine the value that their services and resources provide to the communities libraries serve. The evaluation environment is increasingly complex, and requires knowledge of multiple evaluation frameworks, methodologies, data analysis techniques, and communication skills.

The issue is not that libraries face a paucity of evaluation approaches. The issue is selecting the approach or approaches that best meet the data needs of the library from the many evaluation techniques that exist so that the library can effectively identify the ways in which the library adds value to its community. This challenge is ever more complex as libraries provide both traditional and continually evolving digital library services and resources.

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Accountability to Key Stakeholders

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Abstract

Brown University's ambitious Plan for Academic Enrichment sets forth guidelines for Brown's priorities and directions over the next fifteen to twenty years. A fundamental component of the plan is a set of measures designed to assess the University's progress toward achieving the plan's strategic goals. In consultation with the University's Office of Institutional Research, the Library developed key indicators to measure its contributions to the success of the strategic initiatives outlined in the plan, utilizing data from the annual Association of Research Libraries (ARL) survey, periodic LibQUAL+® user assessments, and targeted outcome measures from University surveys. Results are submitted annually for inclusion in the Provost's report to University administrators and the Corporation (trustees). These measures have been used to monitor the impact of the University's and the Library's efforts in strengthening the academic enterprise of the University; thus, they directly and indirectly inform decisions by University administrators and Library decision-makers concerning priorities, services, and resource allocation. These measures also serve as a framework for further assessment within the Library to identify ways to align the Library's efforts with the plan in order to make meaningful contributions to academic enrichment on campus.

Brown University's Plan for Academic Enrichment

In 2002, Brown University began initial implementation of a far-reaching, multiyear Plan for Academic Enrichment (PAE). The proposal is one of the University's largest academic investments in its 242-year history. It focuses on expanding and enriching Brown's core academic programs, and also establishes priorities in campus life and student support, facilities and infrastructure needs, and financial planning and fund-raising.

Established in 1764, Brown University is the seventh oldest college in America and the third oldest in New England. The University currently

enrolls 5,900 undergraduates and 1,850 graduate students, including medical students. Renowned for the quality of their teaching, Brown's 650 faculty members also make significant contributions to the world through their research and writing. The University attracts over \$100 million in research funding annually. Brown is internationally known for its unique undergraduate curriculum that requires self-motivated students to be the architects of their educational experience. More than 2,000 courses support over 100 areas of concentration and many interdisciplinary areas of study, and the Graduate School offers more than fifty different programs of graduate study.

In the years that the Plan for Academic Enrichment has been in place, Brown has begun the process of increasing the size of the faculty by 100 positions, thereby increasing research and simultaneously lowering the student-faculty ratio. In addition, the University has formed several new multidisciplinary centers, further strengthening an academic environment that already actively supports and encourages cross-disciplinary work. Brown also has undertaken a new master plan for the physical campus, and several modern buildings currently are under construction. The University is midway through a major fund-raising campaign and has achieved over 50% of an overall goal of \$1.4 billion.

It is clear that the Library must play a vital role in assisting faculty and students toward the goals of the PAE. The Brown University Library is a strong, mid-sized research library with particular strengths in special collections including several internationally renowned "collections of record." The Library has 3.5 million volumes and 32,000 current serials, including over 14,000 electronic journals, and access to several hundred licensed databases and 100,000 electronic books. The overall materials budget exceeds \$7.5 million, with digital content comprising approximately \$2.9 million.

In addition to a rich assortment of digital content, Brown students and faculty can make use of a number of digital tools to help them access and manipulate information, including LUNA Image

Management Software, streaming audio, SFX, and Metalib. Brown has an ambitious program to publish digital surrogates from its unique resources; more than 45,000 digital objects from over twenty-five discrete digital collections are currently available. The Library has been an active participant in consortial projects and cooperative activities within the Northeast region. As a member of three virtual catalog/direct borrowing programs, Brown makes more than seventy million additional volumes available to faculty and students.

The Library facilities at Brown are substantial for a university of its size, consisting of two main libraries (one for humanities/social sciences and one for sciences), two small branches (for art and music), a significant library for rare books, special collections, archives and manuscripts, and a new, state-of-the-art storage facility. The Library's budget for 2006/07 is \$19.1 million of which approximately \$7.5 million is dedicated to acquisitions and collections support. Approximately \$10.7 million is allocated for salaries and benefits, including student employment. The Library staffing includes 150 FTE permanent staff and approximately fifty FTE student assistants.

While Brown's library is outstanding by the standards of most North American universities, throughout most of its history Brown developed its library primarily to support the requirements of a liberal arts undergraduate curriculum. Brown did not come into its own as a world-class graduate and research institution, albeit a small one, until the latter half of the 20th century. This reality is reflected in the unevenness of the Library's research collections and its overall size and resources relative to its peers.

Recognizing this, Brown's Plan for Academic Enrichment outlines these general priorities concerning the Library:

For students and faculty to teach and learn and to advance the frontiers of knowledge, they must have access to excellent library, computing, and other information resources. Brown has substantial resources in these areas, but we have not been investing as much in recent years as many of our peers. In the case of the library, for example, our expenditures on the acquisition of books, serials, and other materials is 25% to 50% below comparable expenditures at other research universities, even after correcting for the fact that we do not support a significant number of large professional schools. Although the impact of

that difference can be greatly ameliorated through the use of inter-library loans and other means of access to materials, we believe that it is still necessary to increase our acquisitions capability over the next several years. This will become even more important as new initiatives are launched in multidisciplinary areas and as new faculty come to Brown with different teaching and research interests that will call for adjustments in our acquisition strategy.

In addition to acquisitions support, it is essential that we continue to upgrade our library facilities and operations. As more and more material is available electronically and in multi-media form, the library must continue to change the way it operates and improve its technology base to support our students and faculty adequately. We must also upgrade our facilities to provide the kind of group study space that students now require, in addition to making the libraries more comfortable as places to work and hang out.¹

Key Indicators to Measure Progress

As the University began implementing initiatives to strengthen its academic enterprise, it also planned an assessment program to monitor the impact of its efforts. Four general questions, based upon the overall goals of the PAE, guided the University's overall assessment of success:

1. Has the quality and quantity of faculty scholarship improved?
2. Has the quality of the experience of the undergraduate improved?
3. Has the quality of the Graduate School improved?
4. Have we achieved needed infrastructure improvement to support academic work?

The assessment effort was led by the Provost through the Office of Institutional Research (OIR). The mission of OIR is to support the evaluation and planning efforts of the University's senior administration by initiating and conducting studies on the University's policies, academic programs, and environment. A primary role of the office is to gather information from internal and external sources (e.g., students, parents, faculty, staff, other institutions, and external agencies) for program assessment and strategic planning. The Provost and OIR staff identified a set of indicators and measures that would enable key stakeholders to monitor the

status of the academic plan. The assessment employs an indicator system that enables the University to compare performance at regular intervals across a range of quantitative measures.²

Reflecting the long-term nature of the plan to strengthen the academic enterprise at Brown, it was noted that many of the indicators would be tracked over time as longitudinal data became available. And, whenever possible, comparisons with peer institutions would be utilized; for Brown, the peer group is typically the Ivy League schools and occasionally other leading research universities holding membership in the Association of American Universities. OIR worked with campus departments to identify, develop, and refine appropriate measures that might track progress toward achieving the goals and priorities of the PAE. A factor in selecting indicators was the ability to reliably collect the measurement data.

With the guidance of the Office of Institutional Research, the University Librarian and staff undertook the Library's effort to identify indicators. This endeavor included a review of the literature on assessment and an investigation of methodologies and tools employed by other libraries to assess outcomes.³ In considering and selecting measures, particular attention was paid to the criteria noted above such as data reliability, scope, and meaning, with a focus on the intent of demonstrating the accountability of the Library to the parent organization, embodied in key decision-makers such as trustees and administrators.⁴ Since a primary use of the indicators was as part of the University's presentation to senior administrators and other stakeholders, it was important that the indicators were sufficiently broad in scope and meaningful in communicating the results to an audience outside the Library. As noted by Poll:

Libraries have developed sets of statistical data, performance indicators, cost analysis data, and user and staff surveys in order to assess the quality of their products and services. They must, however, keep in mind that there are certainly different views as to what service quality in libraries actually means. . . . The two most interested stakeholder groups are the population the library is set up to serve and the institution to which it belongs. . . . Indicators for [issues of interest to the latter] might be the market penetration of the library, high use statistics, acquisitions expenditures per member of the

population, library costs per student, and user satisfaction.⁵

The search for measures in itself was a positive experience for the Library and for its relationship to other campus entities, particularly the administrative architects of the PAE. Because of the previous work of many in the library profession nationally and internationally, the Brown University Library was well-poised to consider a variety of measures; indeed, the OIR staff indicated that the Library was ahead of the curve compared to many other areas of the academy that were asked to convey assessment measures. Despite a surfeit of potential measures, however, there remained the core challenge of determining which, if any, of these measures spoke directly to the central questions being asked by the University. While intuitively there was a sense that the Library contributed to "the quality and quantity of faculty scholarship," there was little confidence that any of the measures identified by the Library could reliably indicate a direct or valid relationship. There was greater assurance that the Library could identify indicators that would link to changes in "the quality of the undergraduate experience." Ultimately, the Library was best prepared to measure "needed infrastructure improvements to support academic work." Therefore, in selecting measures, the Library focused particularly on indicators that would convey its accountability as a core component of the academic infrastructure.

The original PAE priority statement for the Library (quoted above) places an emphasis on expenditures, especially in comparison with peer institutions in the Association of Research Libraries (ARL). The traditional input measures that comprise the ARL statistics—size of collections, budget, and staff, in addition to expenditures—have routinely been monitored at Brown, were historically the main basis for library assessment, and were the primary quantitative measures reported by the Library to key stakeholders over the years; thus, they were somewhat obvious measures to include among the PAE indicators. Yet, just as the ARL community was increasingly aware of the limitations of the traditional size indicators, the PAE assessment effort required consideration of "new measures" that would reflect a potential link between goals and outcomes and a greater accountability for performance.⁶ The preliminary, or baseline, set of indicators identified by the

Library for inclusion in the PAE indicators came from three areas:

1. Statistical data from the ARL annual survey
2. Periodic LibQUAL+® data
3. Assessments of the Library included in other

4. institution-wide surveys conducted by the Office of Institutional Research.

Table 1 presents the initial list of Library indicators selected.

Table 1—Preliminary List of Suggested Library Indicators

Peer standing in external rankings.

Measured by the relative position of satisfaction ratings and other measures/indexes of the Brown University Library in relation to our peer institutions (Association of Research Libraries, American Association of Health Sciences Libraries, and other groups).

Expectation: We should see a rise in Brown's position in the ARL Index. We should see improvements in Brown's mean satisfaction scores for Library services and quality in comparison with peer institutions.

Satisfaction of Brown Library users.

Measured by survey results of Brown faculty and students' satisfaction with the Library's collections, services, and physical facilities.

Expectation: We should see increases in satisfaction ratings by all Library user groups, with particular attention paid to faculty satisfaction.

Student self-assessments.

Measured by surveys that ask Brown students to assess the impact the Library has had on their educational experience and on their confidence/skill level in doing library research and finding information resources.

Expectation: We should see increases in students' ratings of these areas.

Refining Measures

After establishing an initial set of indicators, it was important to continue to review the utility and relevance of these measures in describing progress toward the desired outcomes and goals. Over time, this ongoing review has led to refinements in the measures for each of the indicator categories.

Peer Standing in External Ranking

Traditionally, peer standing (as measured by the Library's relative ranking among peer institutions) has been commonly used by the Library when reporting its overall placement with respect to measures such as expenditures and library holdings. ARL annual statistics provide a reliable, consistent, and easily available set of data across institutions for comparing such measures. More problematic, however, has been determining the appropriate group of "peer" institutions for meaningful comparison.

For Brown University, the starting point for all comparisons is with other members of the Ivy League. However, given the diversity in the size,

scope, and programmatic focus of each institution—and the impact of these differences on the libraries—comparisons with other Ivy peers alone have not always conveyed, from the Library's perspective, a complete or accurate picture of the Library's relative standing in supporting University goals. To address this, over time the Library introduced additional ARL library peers (beyond the Ivies) from universities that were of comparable size and supported programs similar to Brown's.

Another approach taken by the Library to mitigate the size variability among Ivy peers was to present expenditures and holdings statistics in terms of per student ratios. This would provide yet a different view of the ARL data that might more readily take into account the differences among libraries in the populations they served.

Finally, the Library refined certain measures for expenditures and holdings in order to focus these measures on the specific achievements resulting from decisions driven by the goals of the PAE as well as those within the direct control of the University. Specifically, in reporting its ARL

statistics, Brown University includes data about the John Carter Brown (JCB) Library, an independently administered and funded center for advanced research in history and the humanities located on the campus of Brown University since 1901. Initially, the annual PAE Library indicators reported the standard ARL data (including JCB data). Data from the JCB Library were subsequently removed so that any changes reported and tracked over time would be attributable to the Brown University Library directly. For purposes of peer comparisons, the Library continued to use the standard ARL data set (including JCB data) since this was the most common basis for comparison across institutions and many campuses have similar situations (with outside or affiliated libraries) and report their data accordingly.

Satisfaction of Brown University Library Users

At the heart of the Library's relationship in the PAE is the desire to improve the university infrastructure in order to more effectively meet the changing needs and demands of faculty and students at Brown. A significant measure in gauging that progress is the expressed satisfaction of users with Library collections, facilities, and services. The Library committed to administering the LibQUAL+® survey at regular intervals as a means to consistently measure user satisfaction over time. In addition to general measures of overall satisfaction, the LibQUAL+® dimensions allow the Library to examine more closely its performance in meeting user needs, particularly in the areas of "Information Control" and "Library as Place" that align with the priorities of the PAE.

Moreover, by consistently relying on the LibQUAL+® survey for measuring satisfaction, the Library has sufficient flexibility within the results to adjust the focus or emphasis of the reported measures to respond to changes over time, without sacrificing reliability or comparability by changing survey instruments or methodologies from year to year. For example, in years where the University's investment is directed more at upgrading physical facilities, the Library can more deeply probe and report the survey results of the "Library as Place" dimension. Similarly, sub-populations are frequently of interest, as in years that the PAE implementation plans place greater emphasis on, for example, graduate education.

Further, the added context of expectations provided by the LibQUAL+® survey is especially important in communicating results to outside

stakeholders. Without the measures of user expectations (indicated in the LibQUAL+® survey by the "Desired" and "Minimum" service performance values), longitudinal comparisons of satisfaction otherwise become fairly static or flat and considerably less meaningful if they cannot convey the important context of changing expectations of the user population over time.

Finally, the growing acceptance and use of the LibQUAL+® survey among ARL peer institutions has the potential to provide the Library with reliable and consistent data from other libraries for benchmarking and comparison purposes.

Student Self-Assessments

From the beginning of the PAE assessment effort, there was a desire to augment the traditional input measures and the newer satisfaction measures with an outcomes assessment. Initially, the Library experimented with a combination of local and national "exit" surveys as surrogate measures to try to gauge the Library's success in enhancing students' educational experience and its impact on their confidence/skill level in doing library research and finding information resources. For example, in repeat Library exit surveys, users were asked "Did you find what you needed during this visit to the Library?" as a way to measure successful Library visits. A significant change in the Library indicators associated with student self-assessments resulted from the inclusion of outcomes measures on the LibQUAL+® survey (first utilized by Brown with the 2005 iteration of the survey). Since 2004, the LibQUAL+® survey has included five questions that address library outcomes; users rate the extent to which the library:

- a. Enables me to be more efficient in my academic pursuits
- b. Aids my advancement in my academic discipline
- c. Provides me with the information skills I need in my work or study
- d. Helps me stay abreast of developments in my field(s) of interest
- e. Helps me distinguish between trustworthy and untrustworthy information⁷

By relying now on the five library outcomes questions included in the LibQUAL+® survey, the Library can draw from a widely-tested, common set of measures used by many institutions. These questions not only measure student self-assessment of outcomes associated with the Library's

contributions to the student academic experience more directly than the surrogate “exit” questions previously used by the Library, but they extend the concept of outcomes assessment to faculty users as well. And as mentioned above, here too the LibQUAL+® survey provides the Library with comparable data from other libraries for benchmarking and comparison purposes.

Using Measures to Inform Decisions

Effective accountability to key stakeholders is more than simply arriving at indicators and measures. Also essential is informing stakeholders of the data and the implications vis-à-vis various goals. The Library makes a concerted effort to ensure that the individuals and governing bodies to whom the Library is most accountable, aside from its customers, are well informed.

At Brown, the Provost plays a critical role in the realm of Library accountability. As the chief University officer for academic affairs and programs, the Provost is charged by the President and trustees (the Corporation) with various responsibilities pertinent to the Library, including:

- administrative responsibility for the Library in the chain-of-command reporting lines,
- assessment of the performance of academic programs, and
- determining the allocation of resources to all academic—including library—initiatives.

The Provost also chairs the University-wide body charged with recommending the University’s annual budget to the President and the Corporation. Obviously, it is important to ensure that the Provost is cognizant of the Library’s standing on core indicators.

The Office of Institutional Research plays a central role as liaison between the Library, the Provost, and other offices on campus with an interest in assessment measures. OIR also provides technical support in interpreting data and assisting Library staff with techniques for presenting data. In preparing the drafts of the Provost’s annual report on the PAE indicators, the OIR Coordinator is often the first to introduce new annual data to the Provost for consideration. The initial draft is followed up by a review of the measures by the Provost with the University Librarian.

The combination of the Provost’s interests in Library performance and in the data have often generated new ways of approaching Library assessment as described above; for example, the use

of population ratios in peer comparisons and an interest in “new measures” rather than inputs were both paths of inquiry pursued by the Provost and developed in subsequent annual indicators. The Provost stays aware of the Library’s ability to satisfy faculty and students and of specific aspects of customer focus; in addition, the Provost must consider the Library’s position vis-à-vis peer institutions and the extent to which this is a component of the overall University comparisons. From the Library’s perspective, reporting and discussing the indicators creates a unique opportunity for informing this key stakeholder of issues related to the Library’s ability to support the University’s ambitious strategic goals.

As a private institution, the overall welfare of Brown is under the stewardship of trustees, known as the Brown Corporation. The Corporation was established by the Charter of 1764 and consists of alumni/ae, parents, and long-term friends and supporters of the University. The University Corporation Committee on Academic Affairs is charged with being fully informed concerning the academic affairs of the University and has oversight responsibility for matters pertaining to the faculty and the programs of teaching and research pursued in the University, including the undergraduate, graduate, and medical educational programs. Among its specific responsibilities, the committee receives regular reports from the University administration containing assessment information on agreed-upon measures of academic quality. The report of indicators and measures on the status of Brown’s academic enterprise is presented annually to the University Committee on Academic Affairs by the Provost.

Coincident with the implementation of the PAE, the Corporation initiated a new program of Advisory Councils to help inform and engage current and emeritus members of the Corporation in main aspects of the University. One of these, the Library Advisory Council (LAC), is charged with considering long-term policy and planning issues and strategic directions concerning the University Library and its relationship to the overall educational mission of the University. A member of the Corporation chairs the LAC, and at present, the chair is also a member of the University Corporation Committee on Academic Affairs. The full LAC is made up of alumni/ae and long-term friends and supporters of the Library. The LAC meets twice a year and is routinely informed of various Library assessment measures. The LAC

(like other Advisory Councils of the Corporation) presents an annual report to the University President.

It is a challenge to keep these various stakeholder groups and key individuals well informed. Typically, the indicator data show only minor variations from year to year, rather than the more dramatic progress that stakeholder groups may prefer. The indicators are also purposefully broad, but then often require follow-up that fleshes out more specific details. While size measures such as the traditional ARL statistics appear relatively straightforward to grasp, some of the new measures require additional explanation in order to develop meaningful understanding. The Library uses its direct interaction with the stakeholder groups (when available) to take advantage of opportunities to build this understanding. For example, at a recent LAC meeting, members were administered a one-page shortened "sample" LibQUAL+® survey developed by the authors; this became the basis for a more thorough explanation

of gap measurement and the impact of changing user expectations.

The effect of having these groups of stakeholders well informed about assessments of the Library and the progress of the Library vis-à-vis overall University plans is multi-fold. The regular reporting of assessment data in itself requires the Library to be accountable for aligning with University-wide strategies and goals. Virtually all decisions flow from and are guided by this set of strategic initiatives. This is exemplified in the rigorous examination of the allocation—and reallocation—of financial resources for the Library by the key stakeholders. In practice, this means that the Library must speak the same language as the decision-makers and refer to the same data and indicators; that is, refer to the same strengths and the same deficiencies that are revealed by the measures.

Table 2 summarizes the relationship of each of the major stakeholders involved in the Library's assessment of indicators.

Table 2—Stakeholder Accountability Matrix

Stakeholder Accountability

Stakeholder	"Stake"	Relationship & Communication with the Library	Indicators
Provost	Ensure PAE progress & success; ensure effective Library management & utilization of resources, and alignment with PAE	Inform indirectly through OIR; followed up by direct dialogue with University Librarian	All key indicators at broad level
University Resources Committee	Determine allocation/reallocation of financial resources	Inform directly via annual written budget request and oral presentation	Interested in indicators at more detailed level, particularly those related to financial aspects of the Library and measures related to specific PAE goals such as collections and space/facilities
Office of Institutional Research	Ensure that indicators measure PAE progress	Inform directly; work collaboratively to identify, develop, and refine appropriate measures; OIR assists in analyses & presentation of PAE indicators	All key indicators at broad level
Corporation Committee on Academic Affairs	Determine academic priorities & programs, with recommendations to the full Corporation; direct the President, Provost, and others to enact	Inform indirectly via Provost; CCAA receives regular reports from the University administration containing assessment information on agreed-upon measures of academic quality	All key indicators at broad level
Library Advisory Council	Advise the President, annual report; chair's influence on CCAA	Inform directly, 2-3 times per year; opportunity to build understanding	ARL size data, especially expenditures; LibQUAL+ satisfaction, especially students; space/facilities

The benefit of this approach has been powerful as well. Since the original implementation of the University's Plan for Academic Enrichment, the Library has experienced significant targeted increases in its financial and other resources. As noted above, from the outset the PAE identified improvements to the infrastructure that supports academic work as a major goal which translated into improvements in Library collections and access as part of the implementation. The indicators, both the ARL statistics as well as the user satisfaction data, are able to monitor both the inputs and the user satisfaction related to collections and information control. Brown's baseline data revealed some weaknesses in collections areas, and financial resources have been allocated accordingly. For example, in the earliest days of the PAE, the Library was successful in developing an annual "index of inflation in information resources" which is added to the Library's annual budget to stabilize the purchasing of information resources. In the past, while the Library often was the beneficiary of "end-of-year" or one-time money, the inflation index now enables the Library to plan improvements to collections—particularly e-resources and periodicals—based on stable, up-front, base budget increases. Where other University budget lines have remained static or even been reallocated to higher priorities, the acquisitions/collections budget has experienced increases to the base budget in each of the last three years; the overall information resources budget has grown 22% during that time and the stability of the budget has allowed for more efficient and effective planning and management of these resources to maximize the spending impact. As a corollary, stakeholders have increased their expectations of accountability vis-à-vis the Library's utilization of resources, so it is expected that collections spending will accommodate the needs of the growing faculty and more diverse, multidisciplinary academic programs.

While it may be impossible to demonstrate cause and effect, there seems to be a positive cycle developing at Brown whereby using the data about collections (ARL) and information control (LibQUAL+®) to drive various allocation and expenditure decisions has shown gradual improvement in the measures. From 2002 to 2005, the LibQUAL+® indicators showed modest improvements in satisfaction related to library support for learning, teaching, and/or research needs, and in the perceived quality of service at

Brown in the dimension of information control, with the most notable increases seen in the faculty population.

In addition to committing to improving the Library's collections, the Plan for Academic Enrichment has recognized the importance of the physical infrastructure to academic work, including "library as place." A significant initiative of the PAE has been the development of a campus master plan of spaces and facilities that support academic and student life; this plan underscores the vital geographic placement of the major libraries on campus and the positive role that Library space plays in the academy. As a result, improvements to Library facilities and spaces have been included among some of the highest profile PAE initiatives and projects. Here again, the indicators are especially aligned to monitor user satisfaction, perceptions, and expectations related to library as place. The baseline data revealed significant dissatisfaction with Brown library facilities, and University resources have been allocated in order to implement targeted improvements. Brown purchased, renovated, and has already relocated 500,000 volumes to a new facility for off-site collection storage (capacity 1.7 million volumes), thereby freeing up space on campus for more student-centered academic uses, while at the same time improving the conditions under which collections are housed and preserved. Significant renovations have been undertaken in the two major libraries, the results of which will allocate more space to users with upgrades in seating, furnishings, group spaces, and public technology. Since the start of the PAE, the University spent approximately \$6 million on the new off-site storage facility, and another \$7 million has been spent to renovate over 28,000 square feet of on-campus Library space, most of this occurring in the past year or as part of renovations currently underway but not yet complete.

The timing of the major space renovations means that the indicators have yet to register the effect of this substantial investment. Still, already there have been notable increases in both the OIR survey results regarding facilities and the LibQUAL+® scores for perceived service performance on the library as place dimension. These may be an acknowledgement of the early PAE efforts at improvements to on-campus Library spaces. However, Brown's library as place dimension has the largest LibQUAL+® adequacy

gaps, and this is an area where Brown lags substantially behind the performance scores of other ARL libraries. At the same time, expectations for library space/facilities have been increasing in the Brown community. Library staff as well as Brown's key stakeholders are anxious to see if the significant investment in Library facilities will demonstrate improvements in the indicators over time.

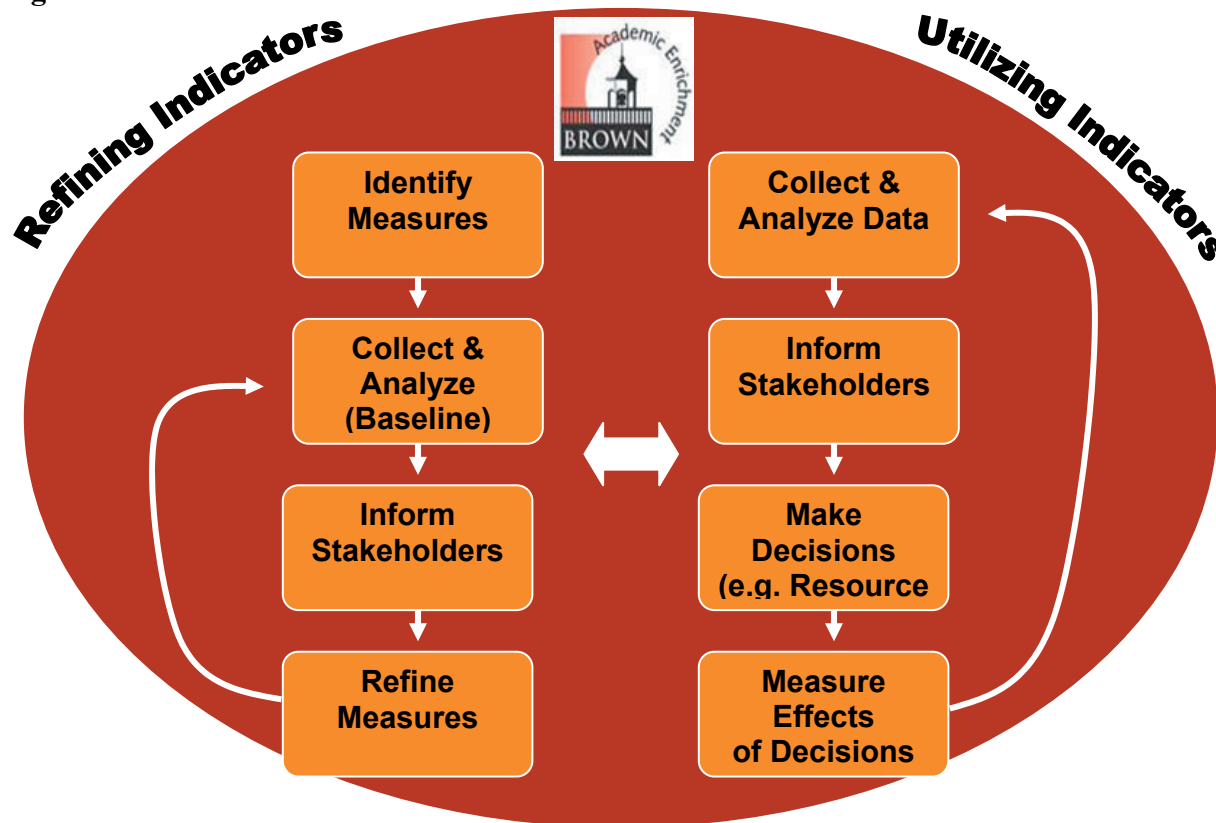
Summary

Brown University's Plan for Academic Enrichment is an ambitious set of long-range goals that utilizes a set of indicators to assess the University's progress. A fundamental element in the Library's success in the PAE is to align with the University's directions, both in terms of the Plan itself and also the corresponding assessment initiative. The Library was well-poised to participate in the PAE assessment effort and to demonstrate its accountability for contributing to the overall success of the University's endeavor because of the research previously conducted and progress being made on library assessment by colleagues throughout the profession. In developing and continuously refining measures, the Library has utilized traditional data from the annual ARL surveys and also employed "new measures" such as periodic LibQUAL+® user assessments and targeted outcome measures. The measures that reflect the perceptions and satisfaction of faculty and student customers are particularly noted by the

decision-makers whose primary concern is to improve the academic life of the University. Measures that allow for peer comparisons also are of compelling interest in assessing the organization within the larger market environment. The Library fulfills its accountability within the governing structure of the academy by submitting data annually to key stakeholders interested in assessment of the PAE such as the Provost, University administrators, the Corporation (trustees), and also targeted stakeholder individuals and groups interested in assessment of the Library, such as advisory groups. An ongoing challenge is to communicate effectively with these stakeholders; it is helpful to build an understanding about the measures and the data over time by having ongoing opportunities to communicate directly with decision-makers. Frequently the interactions that occur in presenting and discussing the measures have generated ideas for ways to improve the selection of specific data items that better reveal the Library's efforts in strengthening the academic enterprise of the University. Being flexible about and willing to refine the specific indicators, and experimenting with different ways to convey the data, have been part of the Library's ability to respond to areas of interest.

Figure 1 illustrates how this process continuously provides feedback to help improve both the indicators themselves and the use of the indicators in overall assessment.

Figure 1



These measures have been used directly and indirectly to inform decisions by University administrators and other decision-makers concerning Library priorities, services, and resource allocation. While it may be impossible to demonstrate cause and effect, there seems to be a positive cycle developing at Brown whereby using the data to drive various allocation and expenditure decisions has led to financial and other investments that appear to result in gradual improvement in the measures. In the Brown experience, neither the assessment measures nor the results are groundbreaking. Indeed, they only begin to address the core questions at the heart of the PAE. Rather, the whole process of developing accountability has been significant—aligning with the University’s strategic initiative, informing and communicating with key stakeholders and decision-makers, working on identified data-based goals, applying and refining measures to assess changes, justifying resource needs based on data, and continuously monitoring progress. By aligning with the University-wide program, the Library has demonstrated its accountability for making

meaningful contributions to the University and for the resources it has been asked to steward in support of academic enrichment at Brown.

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Drilling the LIBQUAL+® Data for Strategic Planning

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Abstract

When the Purdue University Libraries decided in 2004 to work on a strategic plan, it was recognized that realistic planning required reliable assessment data. The assessment data needed to be reliable not only at the university level but also at the college level. The colleges reflect discipline areas. We wanted to be able to drill down into the data, i.e., to break it out into subgroups, to see differences and variation by college and library, or for that matter, any subgroup that we might choose to investigate. To support this, the sampling of students was based on a stratum for each of the ten colleges. All faculty were included in the survey design.

1. Drilling Down. Radar charts were created for undergraduates, graduate students, and faculty in each of the ten colleges. It became apparent that certain themes were consistent across colleges and user groups, but the charts also revealed basic differences among colleges and other user groups. Use patterns, satisfaction patterns, and outcome patterns were also broken out by user groups.

2. The Strategic Plan. The LibQUAL+® data, and more specifically its detailed analysis, had an impact on the strategic planning process. This conclusion is supported by a questionnaire filled out by the thirty participants in the Strategic Planning Group. This survey asked the participants to assess the specific areas in which the LibQUAL+® data affected the planning process. The LibQUAL+® data that most influenced them were the data that surprised them. This data was not visible at the general level. It surfaced as we drilled down to lower levels. Others believed that LibQUAL+® data had a negative effect on strategic planning. I will discuss 1) how this happened, 2) how it led to the scrapping of the first draft of the plan, and 3) the birth on a second draft which folded in what was of value from the LibQUAL+® assessment.

Introduction

How might an assessment of overall library quality affect the writing of a library's strategic plan? Or, to

put it differently, what would be missing from a strategic plan if an assessment were never carried out? The answer is not obvious. A strategic plan is not an operational plan. The purpose of a strategic plan is to look over the horizon at the next five to fifteen years to see where the library should go and what the library should be at some point in the future. Assessments, on the other hand, look at satisfaction levels of patrons with the state of the library as it is and with library operations.

The above introductory paragraph actually represents post hoc thinking about assessment and strategic planning. When the Purdue Libraries decided to carry out the LibQUAL+® survey as a precursor to strategic planning, it was with the firm belief that the data from the survey would greatly inform the strategic planning results. Did this happen? Yes, it did, but the impact was not a one to one relationship. The impact evolved as the planning progressed. The Strategic Planning Team had to wrestle with the definitions of "strategic" and "operational" before real progress could be made. For this reason the rest of this paper is organized along a progressive chronological line rather than by subject categories in order to show how the impact changed over time.

Planning the LibQUAL+® Survey

The Purdue Library administration determined that a strategic plan would be written during the winter and spring of 2006 and that a LibQUAL+® survey should precede that planning. At this point in time the Library staff and administration had an impressionistic knowledge about the quality of the libraries, based mostly on hearsay and casual interaction with patrons, but there was no really "hard" data. A sound strategic plan, it was thought, should be rooted in statistically credible data for various populations and subpopulations of the university. That is, we wanted to be able to drill the data to find what was happening at the micro level. The LibQUAL+® survey must, therefore, be planned in such a way that (1) patron satisfaction could be measured at the level of colleges and schools as well as at the university level, and (2)

some statistically valid assessments could be made at this micro level as well as at the macro level. We decided to survey the entire faculty and to survey stratified random samples of students in each college. If stratified samples had not been used, several of the smaller colleges would have been almost absent in the data. Stratum sizes were based on expected response rates. The survey was conducted for three weeks in October/November 2005.

Analyzing the Data

As the LibQUAL+® administrator, I analyzed the survey results. Briefly stated, the analysis used the raw data from the *Excel* files. Data were broken out by each of the ten colleges and again subdivided by undergraduate students, graduate students, and faculty. These data were used to make thirty radar charts for the twenty-two core questions. The data from the demographic questions, the use questions, and the general satisfaction questions were converted into bar charts. Having completed this part of the analysis, it was evident that 1) the faculty from most of the ten colleges had issues with information resources, or “information control” as LibQUAL+® calls it, and 2) faculty and graduate students from two colleges had issues with the quality of staff services, or “service affect” as LibQUAL+® calls it. It was also clear that students and faculty had very different patterns of using library services. The evidence was so dramatic and clear that there was no question about where the issues lay. For the rest of my analysis, I drilled down into the data represented by these issues, creating more radar charts and bar charts.

Communicating the Results to the Strategic Planning Team

How is it possible to communicate the results of the analysis to the Strategic Planning Team? There was a great deal of detail; do they need all of this detail? This is, on the one hand, a logistics problem; on the other, a question of aiding the comprehension of the team members.

The solution was in a sense a compromise. I prepared a *PowerPoint* presentation of seventy-three slides. The slides consisted mostly of the radar and bar charts. For each slide I recorded my voice onto the *PowerPoint* in order to explain and point out noteworthy features of each slide. The *PowerPoint* presentation was burned onto CDs, and each member of the team received a CD for review two weeks prior to the first meeting for

strategic planning. This was a compromise in the sense that a great deal of data was communicated, but the explanation of each slide reduced the effort needed by each team member to interpret the charts and data.

Reading the Results of LibQUAL+®

I spoke with several members of the Strategic Planning Team after they had looked at the *PowerPoint* presentation. They found the charts and data absorbing, even transfixing in a negative sort of way. They were also deeply impressed with the comments from the open question. They had expected some negative results, but they didn’t expect them to be so obvious.

The results from the directed questions might best be summarized as follows:

1. Undergraduates in all ten colleges were reasonably satisfied with the Library.
2. Faculty overall were dissatisfied with information control but reasonably content with service affect and facilities.
3. Faculty in nine out of ten colleges were dissatisfied with information control. In these nine colleges, the average gap between perceived information control and minimally acceptable information control was negative for every one of the eight questions dealing with information control. Confidence intervals for the gaps of five of the questions were calculated. Even allowing some margin for bias in the estimators, intervals were in the negative range for most of the colleges.
4. Graduate students showed some dissatisfaction with information control, but not to the same degree as did the faculty.
5. Faculty in one college and graduate students in another college were dissatisfied with library staff. This was reflected in negative gaps for a number of the nine questions dealing with service affect.
6. Faculty over forty-five years of age were more satisfied with information control than were their younger colleagues.
7. Faculty who were satisfied with service affect were marginally satisfied with information control. On the contrary, faculty who were dissatisfied with service affect were extremely dissatisfied with information control.
8. Faculty visited the Library Web pages much more frequently than did undergraduate students.
9. Undergraduate students used the physical

library facilities much more frequently than did faculty.

This level of detail would not have been possible without drilling down into the LibQUAL+® data. We would have been totally unaware that we had a problem with service affect if we had not broken out the data at the college level. Everyone on the Planning Team was aware that our information resources did not always meet faculty needs, but they were caught by surprise to find dissatisfaction with staff abilities and performance. This led to a search for possible links between service affect and information control.

The results from the open ended question very much mirrored the sentiments from the directed questions. The most common comments dealt with insufficient online journals and the difficulty of navigating the library's Web site. There were also a number of comments about staff, both good and bad, with certain libraries being singled out for either their good service or their poor service. Comments on facilities ranged from good to bad. This reflects the fact that some departmental libraries have been renovated and others have not. Specific suggestions included the reinstatement of a campus book delivery system and the overhaul of the library's Web site. Some were opposed to the consolidation of departmental libraries; one other person stated that the numerous separate libraries inhibited interdisciplinary research.

Constructing the Strategic Plan: Draft One

The idea of strategic planning is very simple. First, you establish library core values and purposes or first principles. These are the essentials of your library operation, the things you would never change. Second, you scan the horizon to see where the world of academic instruction and research is going. Then you plot a course of library changes to meet the changes you see on the academic horizon, but without violating your core values and purpose.

Negative opinions of the library have a stronger impact than do positive opinions. The first two days of strategic planning bear this out. This is interesting because on the very first day of planning our strategic planning leader opened with this quote from Marvin Weisbord, "If I could ask one thing of a crystal ball in every new situation it would not be 'What's wrong and what will fix it?' It would be 'What's possible here and who cares?'" But this is not where our thinking was.

The Strategic Planning Team of around thirty librarians and staff met for two full days in February. As required we created a list of core values and purposes. We then got around to listing potential changes. We established five principle goals for the next three to five years under the following rubrics:

1. Staff Service
2. Collections and Information Resources
3. Facilities
4. Discovery/Research
5. Information Literacy

It is no accident that the first three draft goals are the same as the three areas of the twenty-two core questions on the LibQUAL+® survey. This becomes more evident as we look at the objectives and strategies to be taken under each goal.

LibQUAL+® data clearly earmarked staff services as an area needing a remedy. The staff service goal read: "User's needs are met by consistent, high-quality, user-centered service." Below are the principle objectives and strategies to be used in meeting the staff service goal. The main measure of success in determining whether this goal is met would be the results of a future LibQUAL+® survey.

The objectives for the service goal include the following:

1. Increase service knowledge, orientation, and skills of all staff groups.
2. Increase consistency in policy, procedures, and enforcement across libraries.
3. Increase user satisfaction across all libraries in specific staff services including Web site, document delivery, reference, and circulation interactions.
4. Decrease complaints concerning staff and user interactions.
5. Increase approachability of staff.

The strategies for the service goal included:

1. Develop a service-orientation training program.
2. Promote hiring practices emphasizing the need for customer service orientation.
3. Develop a reward system for customer-focused employees.
4. Hire a service expert.

LibQUAL+® data also indicated that the extent of information resources and the channel for accessing these resources through the Library Web site were quite inadequate. The Collections and

Information Resources goal read: "Increased faculty and student satisfaction with access to and content of collections and information resources." Again the objectives and strategies for the Collections and Information Resources goal reflect this fact.

Objectives and strategies for this goal included:

1. Increase funding for information resources.
2. Align information resources with research and learning needs of faculty and students.
3. Increase use of collections and information resources.
4. Develop an intuitive, user-friendly portal to the libraries information resources.
5. Increase collaboration with consortial partners.
6. Assess collection fund allocations and redistribute as appropriate.
7. Develop and implement comprehensive collection assessment and management practices.

To measure success in the area of collections and information resources the Planning Team set a goal of reducing the (negative) gap in the next LibQUAL+® survey by 20%.

The third area in the LibQUAL+® survey, the library as a physical space, did not receive much criticism from respondents. Many were quite happy with the physical spaces; faculty as a group did not even use the physical spaces. The average gap scores across all populations and for just about every subpopulation were all positive. There were, however, some negative comments from the open ended question. Some of those negative comments referred to the many libraries one had to visit in order to obtain necessary materials. Looking at the objectives and strategies in this area we see mainly a concern to consolidate library spaces and find off-site storage. But even so, one of the key measures for success in this area is to improve LibQUAL+® results by 50% in the next survey. This is quite telling in demonstrating how LibQUAL+® influenced the thinking about strategic planning. The LibQUAL+® results were already reasonably good. Yet there was this felt need to improve ratings!

The Big Hairy Audacious Goal (BHAG)

Planning resumed a month later in the middle of March. Members of the Strategic Planning Team had had a month to digest the fruits of their work in February. Our planning leader wanted us to go back and take a look at something we had created called a "Big Hairy Audacious Goal." The idea is to

have a vision of the future with a central unifying goal in mind, a goal so large that it will take ten to fifteen years to accomplish. This goal cuts across all other goals. It should be a unifying goal for everyone in the library, no matter their specific functions; it should catalyze energies and develop a group spirit. The goal should be audacious enough to "stretch" the library. Our planning leader emphasized that there are mega issues more important than other issues. "Mega issues are overriding issues of strategic importance, which cut across multiple goal or outcome areas. They address key strategic questions the organization must answer . . ." The Team spent a great deal of time crafting a one sentence statement of our Big Hairy Goal. The BHAG reads as follows:

The Purdue University Libraries will achieve preeminence as an innovative and creative research university library in meeting the challenge of the Information Age.

For a plan to be truly strategic, the individual goals of the strategic plan should percolate down from "the big hairy audacious goal." If "percolate down" is not the correct description, then there should at least be a unity of vision between the five specific goals and the overarching goal of the BHAG. As the Team members reviewed the five goals we had devised back in February, we realized a lack of fit between them and our BHAG. Those five goals had been created from the bottom up, not from the top down. Three of them, staff service, collections and information resources, and facilities, were all obviously reactions to the LibQUAL+® survey. None of these three goals proclaim that Purdue Libraries wishes to "achieve preeminence as an innovative and creative research university library." It dawned on us that we had been "fixing what was wrong," not "looking to what's possible," to paraphrase Marvin Weisbord. As discussion ensued, it also became apparent that the original five goals did not mesh with the university's strategic plan. At that point we asked, "Do we dare start over?"

A New Strategic Plan

A decision was made to begin again. But in starting over we would not necessarily abandon the useful suggestions found in the old plan. Some of the same themes would still be there, but their relative importance would change. We sought to find a set of specific goals that blended well with the

university's strategic plan and would at the same time be steps toward making Purdue Libraries "preeminent as an innovative and creative research university library."

The new plan retained the original core values and purposes. The five original goals were replaced by four new goals. The rubrics for these four goals were the same as the rubrics for the university's strategic plan. The rubrics are:

1. Learning
2. Discovery
3. Engagement
4. Infrastructure

Service affect, information control, and facilities are no longer the focus of the plan. Learning, Discovery, and Engagement describe the areas in which the library will be preeminent. The Infrastructure goal is a catchall for other necessary functions. Those who thought the library trade was about books and journals might be surprised with these goals. Actually these older concerns reappear as sub-themes.

The goal of Learning states: "Purdue Libraries advances learning with information literacy initiatives and furthers the University' learning goal with focused collections and information resources." The emphasis of this goal is to advance the information literacy program on campus, but one objective is to "increase alignment of collections and information resources in support of a growing and changing learning environment." In addition, one of the means to measure the success of this goal is an improvement in LibQUAL+® results relating to the access and use of information resources.

The goal of Discovery states: "Purdue Libraries furthers the University's discovery goal by providing information resources and applying library science expertise to interdisciplinary research." Here again, the emphasis is on the Library's research agenda and the participation of librarians in interdisciplinary research with teaching faculty. One of the objectives, however, is "increase alignment of collections and information resources to meet interdisciplinary needs." One of the metrics of success for this goal is increased satisfaction with the collections as measured by LibQUAL+®.

The goal for Infrastructure states: "The Purdue Libraries facilities, services, information technology, administration, faculty, and staff will be aligned with the University's learning, discovery, and engagement goals and key

overarching strategies." There does not appear to be anything here dealing with the original set of concerns. One objective, however, is to "increase knowledge, service orientation, and skills of all staff groups within the library." Also, one of the strategies is to "create and implement a plan to improve the Libraries' Web site." A measure of success for this goal is to improve LibQUAL+® results relating to service and facilities.

The new strategic plan has lowered the concerns for staff service, information resources, and facilities to sub-points under larger concerns. Collections and information resources are sub-points under both Learning and Discovery. Staff service issues and facilities are now subsumed under the Infrastructure goal. LibQUAL+® is still viewed as a necessary tool for the future evaluation of these issues.

LibQUAL+® and Strategic Planning: A Survey

At the end of the strategic planning process, I asked the members of the Strategic Planning Team to state their opinions regarding the effect of the LibQUAL+® survey data on their thinking about the strategic plan. Twenty three questionnaires were returned.

1. Of the twenty-three respondents, twenty-one had viewed the *PowerPoint* presentation about LibQUAL+® and had also read the selection of comments from the open question.
2. Respondents were asked to agree or disagree, "The result(s) of the LibQUAL+® survey directly influenced my thinking about issues for the Strategic Planning sessions." The possible responses were a scale from 1 to 7, with 1 representing "disagree strongly" and 7 "agree strongly." The average response was 6.1.
3. Respondents were asked, "What result(s) from the LibQUAL+® survey, in your opinion, were most influential in developing the strategic plan?" Allowing more than one answer the results were: (1) dissatisfaction with staff service or knowledge—fourteen respondents, (2) dissatisfaction with information resources—thirteen respondents, (3) the granularity of the data, i.e., having different results from different colleges—3 respondents. One respondent mentioned the degree to which the faculty and graduated student responses drove the thinking about problems. Another respondent said that it divided the plan into what is strategic and what is 'catch-up.'

In an open ended question about the relation of the LibQUAL+® results to the Strategic Plan, there were several enlightening responses:

- “LibQUAL+® was so helpful to have had prior to strategic planning. It gave us an objective, hard look at ourselves, especially our areas of weakness. It set the framework for positive thinking about change!”
- “The resulting strategic plan will reflect what we learned and will be integrated into the plan, but it will also be used in the upcoming year to establish priorities in accomplishing our strategic plan.”
- “Provides valuable and useful data on which to base evaluation and make projections.”
- “I don’t believe that as we got further into the plan . . . that it has much relation. We already had our assumptions and are . . . to build the strategic plan around these assumptions with or without LibQUAL+®.”
- “I think we tried to remember to keep it in mind, but in actuality it ended up not being there [in the plan].”
- “Certainly, LibQUAL+® results pointed to areas that needed to be addressed. Not all of the strategic plan comes from LibQUAL+® results, however, [the plan] also relates to the university strategic plan.”
- “Regardless of what is done in the next few years to improve services and resources, the same type of comments will be generated in the next LibQUAL+® survey. Dissatisfied people write comments when surveyed.”
- “While there is some debate about the overall quality of LibQUAL+® as a contemporary survey instrument, it has been helpful to have some points of departure for the strategic plan that were gleaned by LibQUAL+® results.”
- “The responses to the open-ended question on LibQUAL+® raised several themes in regard to user satisfaction which were corroborated in interviews and focus groups conducted by our consultant. Both qualitative and quantitative portions of the LibQUAL+® resulted in useful information for our strategic plan.”
- “It may have distracted us from the innovativeness and new projects we were

trying to project into the future.”

Conclusion

The assessment data from the LibQUAL+® survey had a very important influence in the creation of the Purdue Libraries’ strategic plan.

1. Drilling the data, e.g., breaking it out at the college level, made the team aware of issues that it would not have known about otherwise. This was particularly true of the data relating to service affect.
2. Prior to the survey the library staff and administration had hunches and intuitive knowledge about patron opinion. The survey moved these hunches from the realm of a probable truth to a certain truth. They were no longer debating points. We were able to move from debate to action plans. As one planner stated, “LibQUAL+® has been wonderful in helping inform our thoughts. We are basing our directions on actual facts, not hunches.”
3. In the first two days of planning the survey data confused the issues involved in strategic planning. We conflated strategic planning with operational planning. To quote yet another planner, “LibQUAL+® limited the thinking of the planning group resulting in a rather narrow focus. This situation led to goals less robust and confused the process. Immediate operational needs were emphasized instead of strategic goals.”
4. Having to deal with these operational needs had a beneficial effect on the planning process. Working through these issues forced us to better understand the nature of strategic planning, what it is and what it is not.
5. The resulting strategic plan is a balanced document. The emphasis is on the future directions and goals of the library. It in every sense of the word “a big hairy audacious goal.” Yet balancing the “audacious” part are elements and subparts which face up to the deficiencies of the existing operation. It recognizes that existing “operational needs” must be addressed if one is to envision a more daring future.

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Assessing Learning Spaces

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Abstract

How do you know when a new building project or renovation is successful? Many libraries proudly discuss the tremendous increase in gate counts when they open information commons or similar facilities. However, is the gate count a useful or sufficient measure of the success of a facility? This session will present a framework for developing an assessment strategy for new or renovated technology-enabled learning spaces. Institutions are spending large sums on renovation, additions, and new construction of learning spaces in order to incorporate technology and address new teaching and learning strategies. These spaces include classrooms, libraries, information commons, multi-media centers, and computer labs.

The presentation will describe a process whereby work on assessment strategies begins at the inception of the project, as a means of sharpening the goals for the new learning space. A wide variety of goals for these spaces will be explored, including goals related to learning, development of social community, use of technology in teaching and learning, and student engagement. Then, various methods of assessment to collect data to address the goals will be described. Examples will be provided that are in use in a variety of institutions. Finally, some suggestions on assessment implementation strategies will be described.

Introduction

Many institutions of higher education are allocating resources to build new facilities or renovate existing facilities in order to offer new technologies and to accommodate new pedagogies that incorporate active learning, group work, and undergraduate research. These spaces include:

- Information or learning commons
- Multi-media studios or production areas
- Computer labs
- Classrooms

While creating or renovating these facilities generally requires a major resource investment by

campuses, there is little indication that the developers of the facilities have a strategy to determine or demonstrate their effectiveness. Most institutions do not have data, either quantitative or qualitative, to demonstrate whether, in fact, the technologies in these spaces are being used and what impact they have had on student learning. They are not able to make a case based on data for additional improvements or similar renovations of other areas of the facility or campus. At present, there is no prevalent model in the library field for assessing learning spaces.

This paper presents a stage in the author's thinking about developing a framework of assessment of learning spaces, particularly those associated with library buildings and renovations. Frequently, these library building projects are centered on the creation of an information commons or learning commons—technology-rich spaces that offer a range of library and information technology services, sometimes including other campus units, and that provide group as well as individual spaces for study, learning, and interaction. These spaces may include a new style of reference area that incorporates technology assistance, multi-media production workstations or studios, and classrooms, particularly for information literacy sessions. Building on earlier presentations, this paper focuses on assessment of information commons and discusses:

- **Why** institutions may want to assess learning spaces
- **What**, specifically, they might assess
- **How** to assess, e.g. by what types of methodologies
- **Examples** of implementing assessment
- **Tips** for successful assessment implementation

Why Assess Learning Spaces?

There are many reasons to assess learning spaces and more than one reason may motivate the development of an assessment plan for a particular learning space such as an information commons. When considering learning spaces, assessment can be incorporated beginning in the planning phase

and through the post-occupancy stage. Before building or renovating a physical space, the institution may want to conduct a needs assessment to clarify the purpose of the project. For example, many information or learning commons incorporate space for other campus services, e.g., the writing center or faculty teaching and learning center. A needs assessment could help determine whether the incorporation of these units in library space is solely a matter of convenience, i.e., co-location of those services to related library activities, or whether a goal of the project is some integration of services into a new model. This kind of distinction would have implications for the kinds of areas probed in an assessment and also for the markers of success once the facility was finished and the services implemented. A needs assessment could also help determine the types of courses or programs that might take particular advantage of the facility, which would be useful if the institution wished to conduct a pre-and post-assessment of changes in the curriculum made possible by the existence of the facility. Planners may also want to think through what other kinds of data collection they will want to have in place prior to the renovation or construction in order to make before and after comparisons of things like number of people entering the library, impact of the renovation on collection use, and numbers of questions asked by users.

Frequently, library administrators will be interested in demonstrating the value or effectiveness of the investment in a new building or renovated space and will initiate some type of assessment program once the facility is in place. They want to provide evidence to others, such as higher education administrators, private funders, accrediting agencies, and state legislators, that the resource investment in the new space produced measurable results. In particular, many institutions' plans for renovation or new construction are motivated, at least in part, by accreditation standards, and institutions will want to have concrete plans for data collection and analysis that they can use in a subsequent cycle of accreditation. The ubiquitous push for accountability in higher education has an impact on assessment planning for learning spaces and can provide a useful opportunity for library administrators to contribute data to the institution's overall assessment program.

While typically much of the data collected for analysis is intended ultimately for an audience

external to the library, the internal staff also has a need for data. The staff providing services for the new learning space are often interested in measuring user satisfaction in order to determine whether they have effectively addressed user needs and are providing services that enhance users' ability to make the best use of available resources. They also want to find out what changes users suggest for the physical layout, furniture, mix of equipment, software availability, and types of services. Their primary purpose in implementing assessment is often to verify their informal perceptions of user need and satisfaction in order to plan and make improvements in what they offer.

What to Assess about Learning Spaces

Overall, the issue of what to assess about a newly constructed or renovated learning space needs to be matched up with the goals and objectives of the facility. For example, if the library administration wanted to demonstrate that the new facility had contributed to the overall institutional goal of increasing undergraduate research, gate count data would not be a particularly useful measure to provide such evidence. At the beginning of the planning stage for the new or renovated facility, a group of stakeholders should develop a consensus on the goals and objectives for the proposed space. This group may wish to gather data from a sample of the intended users of the space in order to verify their own perceptions of need, to expand the possibilities of what kinds of needs the facility might address, and to clarify how the campus perceives the proposed project. This will help planners develop an overall understanding of what they need to assess.

In the post-occupancy period, three broad questions that an institution might want to pose are:

- Have the intended purposes of the space been accomplished?
- Are users satisfied with the spaces?
- What changes are needed?

Measuring whether the goals and objectives have been achieved is not a simple task and may need to be addressed through multiple assessment strategies. Even if the intended purposes of the space have been accomplished, it is not a given that users will be satisfied with the spaces. Users may also have suggestions for changes whether or not they are satisfied with the spaces.

In addition to these three broad areas, a number of other issues might be addressed through assessment (Table 1). Institutions may wish to use an extensiveness measure to determine the degree to which their facilities are being used. They may desire an efficiency measure to determine costs for services, cost per hour of opening, etc. They may

want an effectiveness measure to determine the degree to which the use of the facility assists in achieving a broader objective, such as increasing a sense of campus community. Measuring service quality can be another focus for assessment, and usefulness for achieving specified objectives can be another determinant of the facility's success.

Table 1. What to assess about learning spaces

MEASURE	EXAMPLE
Extensiveness	How many courses, students, faculty are using the facility?
Efficiency	What is the cost of support for each hour of service or course?
Effectiveness	Does the use or pedagogy incorporate innovations enabled by technology?
Service Quality	Can students receive the assistance they need with multimedia production tools?
Usefulness	Are faculty giving new types of assignments that enhance deeper learning as a result of the availability of the facility?

Methodologies: How to Assess Learning Spaces

Planners will want to choose appropriate methods for carrying out assessment once they have determined why they want to assess and what they want to measure. This section describes a number of methodologies and also includes some examples. The author collected examples through campus visits and through an inquiry posted to a listserv on information commons topics and one on learning space design.¹

Some of the methodologies that can be used to assess learning spaces include:

- Unobtrusive data collection
- Observation/photos
- User surveys
- Focus groups
- Case studies
- Interviews

Libraries often have some systems in place that collect data in unobtrusive ways, such as using a turnstile gate count as individuals enter a facility or by using a Web statistics program to collect data on

which parts of a Web site are heavily accessed. When the topic of assessing learning spaces is raised, the most frequent method that comes to mind is measurement of the number of individuals using a new or newly renovated facility, especially when comparison data exists for the facility prior to a renovation. In the case of an information commons or multi-media production facility, libraries often want to monitor what types of technologies are being used, both hardware and software, and how often they are being used. It is important for some institutions to monitor the amount of time that all desktop equipment is in use in order to have data to back up requests for additional equipment, furniture, and space in which to deploy them. Facilities managers may also want to collect data that allows them to provide information on the costs of equipping and servicing the facility, including the cost of staff time. Some reference departments are part of information commons and will use their same data collection forms for keeping track of reference queries as they did in more traditional reference areas. All of these types of data collection employ relatively simple

techniques and, if used consistently over a period of years, enable managers to understand trends.

Two articles have asked librarians in new, expanded or renovated libraries to report some of their data via a Web survey in order to understand the impact of these facilities on use patterns, and the availability of wired and wireless services, workstations, group study rooms, and other features.²

Observation of user behavior has been employed by some institutions in the planning phase of the renovation project and in the post-occupancy phase. In the planning phase, observation can yield such information as the saturation of workstations or other equipment use, the typical size or range of sizes of student groups, and the preferred furniture, particularly if some prototypes have been acquired in advance of the final furniture decisions. After occupancy, observation can be used to determine the mix of individual vs. group spaces being used. At Brigham Young University, library staff take hourly counts of three types of group use—at tables, at computer workstations, and in study rooms in order to better understand use patterns, identify busy times of day, and understand trends.³ A much more intense form of observation using ethnographic methods is being considered by colleagues at Wesleyan University and the University of Rochester.⁴ Some institutions supplement direct observation through the use of photographs; they post signs warning facility visitors that their photograph may be taken for study purposes. Unobtrusive data collection and observation can yield information on:

- How many students and faculty are using the spaces
- What types of technology are being used
- How often potential users are turned away because all equipment is in use or all seats are full
- What are the costs of equipping and servicing the facility
- How frequently reference, help or other services are being used

Surveys can be employed for a variety of purposes, including collecting data on user satisfaction, demographics of facility users, and specifics on the activities for which users are utilizing the facility and the hardware, software, and other features or services. Surveys can also be used to determine what users particularly value or what they'd like to see changed or improved. At

Charles Darwin University in Australia, a student survey asked respondents to choose an answer from a Likert scale as to whether the facility helped them meet their learning needs. It also asked students to check off the reasons they visited the information commons, e.g., to use e-mail or to access books or journals.⁵ The Hardin Library at University of Iowa developed three surveys to collect information on satisfaction with their information commons, classroom usage, and other matters as part of a larger self-study.⁶ Staff can hand out paper and pencil surveys to users in the facility or they may develop Web-based surveys that pop up on the screens of the facility's workstations. Some campuses will wish to mail or e-mail a survey to a representative sample of all potential users in order to understand the behavior of both current users of the facility and those who have not chosen to use it. Others will use data from the LibQUAL+® survey, administered through an Association of Research Libraries program, to gather data on user perceptions of the physical library facility, both before and after renovation.⁷ Surveys can yield information on:

- Users' expectations
- Student and/or faculty satisfaction with the space and/or services
- Types of uses of the space
- Most important and least important aspects of the space for users
- Changes desired
- Reasons for non-use

Focus groups are also conducted both in the planning stages and post-occupancy. In planning a facility, some institutions gather together small groups of target populations (e.g., undergraduates, or students in particular programs), and using some pre-determined questions, elicit their views of features of the planned space. At Sage Colleges, focus groups of students, faculty, and staff were convened and questions were devised using the framework of force field analysis. Participants were asked such questions as what would draw people into the library, what would keep them away, and what would they like to see in the new library.⁸ Some institutions provide drawings prepared by the architects or designers for the focus group participants to respond to, or they may provide photos of furniture or layout designs to gauge participant reaction. After occupancy, participants in a focus group might be asked about their usage, how the facility has enabled them to better achieve

their academic objectives, or what improvements they would like to see in the facility.

Interviews can be conducted either in the planning phase, post-occupancy, or both. Prior to the renovation or new construction, interviews can yield more detailed impressions than are generally possible through more limited tools such as surveys. After the occupancy of the facility, interviews can yield in-depth accounts of the ways in which the facility is being used and can also provide detailed information of what users value or want changed. Interviews and focus groups can yield information on:

- The difference in the availability the facility has made on faculty teaching and student learning
- The way in which availability of the facility promotes faculty and student innovation
- The way in which the facility promotes a sense of community for the institution
- The value of services available and the need for additional or different services

Case studies have been underutilized in assessing learning spaces. This type of qualitative research can yield powerful stories of the way that the facility has enabled change. Case studies can yield information on:

- The way in which the facility supported curricular changes of a particular department or school
- The way in which the facility supported incorporation of a new technology in a course and the impact on student success
- The innovative ways in which technology is being used by faculty and students
- The impact of the availability of the facility, technology, and services on at-risk students or other identified groups, e.g., commuter students or graduate students

Many assessment plans call for a combination of methods. For example, interviews can be used prior to the preparation of survey questions to gain a good understanding of the nature of questions that might be addressed. Interviews can be used after survey data is initially reviewed in order to clarify and more deeply understand the data, especially if the outcomes of the survey vary greatly from anticipated responses. Choosing methods within the context of careful assessment planning will assist institutions in allocating available resources wisely.

Assessment Planning

A campus group may be charged with developing an overall plan for the assessment of learning spaces that are slated for building or renovation throughout the institution; this may be a sub-group of a committee working on campus-wide facilities planning. The group may contain members from the university administration, facilities operation, faculty, student body, and other relevant services such as information technology and libraries. If such a group exists on campus, the individuals planning for an assessment of an information commons or new or renovated library facility should dovetail their work with that of the overall group. The same sectors listed above could be invited to participate in a planning group for assessment of an information commons. It would be very useful to have the perspectives of academic administrators, facilities planners, faculty, students, and other units as the overall objectives of the facility are discussed and various strategies for assessment are debated. In addition, campus assessment experts should be included, or outside assessment experts could be recruited to join the group.

An overall assessment plan for an information commons could include a variety of methods for data collection resulting in information that could be combined and used for various purposes. Such a plan could include: a needs assessment at the beginning of the project; unobtrusive measures such as gate and group study room counts to monitor use and use trends; student and faculty Web-based satisfaction surveys; a case study focusing on a course in which students develop multi-media projects to determine whether the availability of the facility assisted them with their academic work; and interviews with faculty, students, and staff to gain a deeper understanding of the survey data collected and to provide a mechanism for soliciting suggestions for needed improvements, changes, or additional services. At the University of Massachusetts, Amherst Library, a team of library and campus assessment experts working with the Provost's office, implemented an assessment strategy both pre-renovation and post-occupancy for their learning commons. It included observational surveys, use data comparisons, focus groups, and a survey.⁹

Assessment Tips

Assessment often proves to be time-consuming and

resource-intensive for institutions. In discussing assessment with representatives from many institutions, some key factors are apparent that could help those involved. Focus on the big picture, particularly in aligning the assessment goals with institutional goals. If the institution has a particular emphasis on themes such as success for first-year students, development of a sense of campus community, or student involvement in research, the assessment planners should incorporate ways to measure the facility's contribution to the achievement of those institutional goals. Understand the potential audience for the assessment results and the ways in which the results will be communicated to various audiences. Involve individuals from a variety of stakeholder sectors to better understand the potential audience or the assessment results and the types of communication mechanisms that might be most meaningful to them. Those involved in assessment planning will often need to be persistent since this topic, while on the "to do" list of many of the parties involved, is often at the bottom of that list and therefore its implementation can be postponed time and again. Working with assessment experts, found on many campuses in offices of institutional research, in educational improvement units, or in departments of statistics, particularly within schools of education, can greatly aid the work of assessment planning groups. These experts will assist the planners to clarify their assessment objectives, make informed choices on methods of assessment, and identify key questions or modes of inquiry. They may be available, often for a fee, to develop the measures used, deploy them, and do the preliminary analysis of the data. Once the assessment is completed, it is important that there be a mechanism for ensuring the implementation of at least some of the recommended outcomes.

Assessment Resources

These resources are recommended for developing or extending assessment expertise in assessing learning spaces:

Association of Research Library's LibQUAL+® program, <http://www.libqual.org>

Association of American Colleges and Universities. *Liberal Education Outcomes*
<http://www.aacu.org/publications/index.cfm>

Chauncey, Bonnie. "Alternative Assessment in Higher Education: Web sites for a Learner-Centered Approach." (Internet Resources column) *C&RL News*, (Nov. 2004).

<http://www.ala.org/ala/acrl/acrlpubs/crlnews/backissues2004/november04/alternativeassessment.htm>

EDUCAUSE Learning Initiative (ELI)

<http://www.educause.edu/SuccessfulLearning/6796>

Project Kaleidoscope (PKAL)

<http://www.pkal.org>

TLT Flashlight Project

<http://www.tltgroup.org>

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Endnotes

1. Information Commons Interest Group listserv, INFOCOMMONS-L @LISTSERV.BINGHAMTOM.EDU, (accessed August 1, 2006) and The EDUCAUSE Learning Space Design Constituent Group Listserv, LEARNINGSAPCE@LISTSERV.EDUCAUSE.EDU (accessed August 1, 2006).
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Combining Quantitative and Qualitative Assessment of an Information Common

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Abstract

The paper reviews how a quantitative (observational study) and a qualitative (focus group) project were conducted in tandem to enrich data analysis and improve insight into student use of the Learning Commons. The paper addresses how the observational study data informed the focus group questions and how the results of the focus group sessions subsequently informed the need for future assessment. We discuss how the conclusions drawn from the combined data are more robust than if drawn from either study in isolation. The paper also reviews how each study was designed, conducted, and analyzed.

The Learning Commons (LC)

A campus-wide collaboration, the Learning Commons (LC) opened October 2005 at the University of Massachusetts Amherst in the W.E.B Du Bois Library. "The Learning Commons is envisioned as a vibrant open studio environment with seamless, coordinated resources and services—a place where students will be able to access the library's extensive print and electronic collections; utilize state-of-the-art technology for research and coursework; meet with faculty and fellow students in comfortable, inviting breakout rooms; and receive support from experts in research, technology, writing, and the disciplines. The Commons will encourage engagement with information in its various forms, reinforce the value of collaborative inquiry, and create new opportunities for community interaction."¹

The Learning Commons was designed for both collaborative and independent work, and conceived as a busy vibrant space. It would meet many facilities, technological, social, and pedagogical needs of the campus. It would meet complex, varied and shared objectives of the participating partners. The LC also addressed many known and

long existing facilities issues in the Library building. Specifically, it would provide additional and more comfortable furniture, individual and group spaces, a greater number of computers, and access to food and drink. The LC was open 105 hours a week initially and increased to twenty-four hours five days a week (134 hours per week) during the survey period.

The Observational Study

The study focused on these questions:

- Which services are being used?
- When are services being used?
- Under what conditions?
- How does use of the same space compare before and after the implementation of the Learning Commons?

An observational study first conducted in 2001 was revised to reflect the new Learning Commons floor plan. The revised study was repeated six times beginning one month after the LC first opened. The one-week surveys were completed on the following dates:

- November 13-19, 2005 (pre 24/5 schedule)
- December 4-10, 2005 (after 24/5 schedule)
- February 5-11, 2006
- February 26-March 4, 2006
- April 16-22, 2006
- May 17-23, 2006 (exam period)

For each survey period, once every hour that the LC was open a staff member walked around counting the individuals engaged in activities in each of the predefined locations. Sixty-one locations, service points and/or activities were defined and counted (group study rooms, tables, reference desk, computers used, cell phone users, sleeping users etc.). Data was entered into *Excel* from tally sheets and analyzed. Tally sheet can be

seen at <http://www.library.umass.edu/assessment/LCtallysheet06.pdf>.

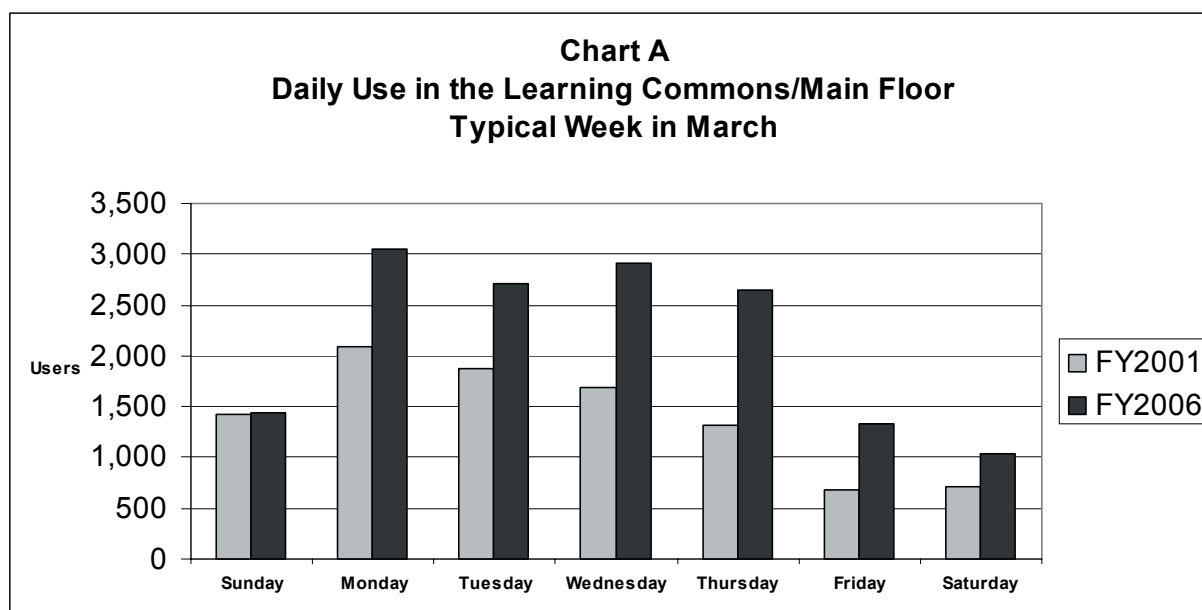
Background

The first observational study was undertaken in 2001, prior to the conceptualization of a learning commons. It was designed to provide objective information on the use of the various services and study areas of what was then a very conventional reference department prior to reorganization. The area being surveyed was divided into forty-five unique spaces/service points so all activity could be captured in a highly disaggregated form for utilization analysis. One major source of concern prompting the 2001 study was the apparent mismatch between existing furniture and user preferences. Historically, we had been under fiscal pressure to maximize the number of seats available at the lowest cost. This led not only to purchasing less durable and less desirable furniture, but also to selecting multi-seat models rather than individual seating. We had far too many six and eight seat tables and too few small tables for one or two individuals. As a result, for example, one or two students might occupy a large table and by strategic placement of backpacks, books, coats, etc., rendering the large study table useless in realizing its intended goal of maximum seating. During the 2001 survey our attention to users engaged in traditional study (i.e. reading paper materials) also included the number of people at individual tables

and noted the “theoretical” capacity (number of chairs).

With the implementation of the Learning Commons during the summer of 2005, and upon review of the 2001 survey, we felt we could repeat the study with some revisions. Replicating the study would provide useful data about the use of the LC. It would also allow us to compare use of the same space pre-LC using the earlier data. In both the original (pre-LC) survey and in the later survey, staff working with users on the floor were engaged in discussions to ensure we were identifying all the relevant areas and services. When in doubt, we erred on the side of more subtle differentiation of spaces/services rather than combining separate activities into a larger whole. We believed the advantage of highly disaggregated data is that it can be used for a more nuanced analysis. Multiple categories would be combined for analysis with broader perspective if necessary.

The first LC survey was taken fall 2005 prior to the implementation of a 24/5 service schedule. By the time the 24/5 schedule was in place we were nearer to the exam period, so the second survey gave us our first glimpse of usage of the new facility with extended hours and during the run-up to finals. Initial analysis of the first two 2005 surveys confirmed, and quantified, the unanimous perceptions of staff that attendance and use had increased. See Chart A.



Additional revisions were made that expedited the counting and entry process and four separate weekly counts were undertaken in the spring of 2006. These weeks sampled both typical and non-typical periods. A goal added during the process was to create a statistical picture of the entire academic year. Spring 2006 gate-count data confirmed that use was continuing to increase. Historically, the number of building entrants in the spring was lower than the number of building entrants in the fall. The spring 2006 data (447,000 users) showed an increase of 12% over the fall 2005 data (394,000 users). Additionally, fiscal year 2006 data showed a 53% increase in building traffic over the previous fiscal year.

The Focus Groups

The results of the observational studies provided rich and meaningful data. Further, it also raised additional questions while leaving some other questions unanswered including.

- Why are some areas used more than others?
- Does high use mean an area was well liked?
- Are the high use areas liked equally well?
- Was logging into the campus network a factor?
- What attributes made areas heavily/lightly used?
- Was noise a factor?
- What would users like in a separate quiet study area?
- What changes would students like to see?
- Which pieces of furniture and configurations were most?

Knowing that focus groups would add context and depth and allow a deeper interpretation of observational data,² we followed the observations counts with a focus group study.

Three focus group sessions and one individual interview were held in April 2006. Learning Commons users were invited to participate in focus group sessions according to a randomly generated time and location chart. The invitations were issued by Learning Commons staff supervisors and the assessment librarian. A free beverage coupon at the café was given to participants when they signed-up for a group session and two additional free beverage coupons were given at the time of the session as an added incentive.

The nine participating students included five women and four men. Students were from all class years including two graduate students. Four students lived off campus and five lived on

campus. They use the Learning Commons an average of five days a week, sometimes multiple times a day. Five of the students come from racially or ethnically diverse backgrounds.

The group sessions were facilitated by the assessment librarian and notes were taken by members of the Assessment Committee. Discussion topics included:

- Favorite and least favorite areas of the LC and their attributes
- Discussion of specific areas including: study pods, study rooms, public stations, tables, and lounge chairs
- Development of quiet areas
- Development of the adjacent courtyard area

Notes were transcribed after each session and organized by furniture type and location. Results were shared through a final report, individual meetings held with library staff members, the staff Intranet, and a library all-staff presentation.

A Learning Commons map was used as an aid in the discussions. Icons from the map for the study pods and the public stations are included below.

Conclusions from Observational Study

- Building traffic increased 53% between 2001 and 2006.
- Use of the main floor (Learning Commons floor) increased 190% between 2001 and 2006.
- Overnight hours are popular all semester and especially so at exam time.
- Students use of a variety of seating configurations and locations.
- High-use times across a day and throughout the week were identified with implications for staffing service points.
- Laptop use is substantial (10% of LC users).
- Cell phone use is ubiquitous but not overwhelming. 1.2% of LC clientele were using cell phones. Use was distributed proportionally during the open hours.

Conclusions from Focus Groups



Study Pods



Public Stations

- Students liked the computer study pods area best because they were bigger than the public computer stations; they provided more space to spread out; they were surrounded by the activity of the LC but sectioned off—semi private, they have electrical and Ethernet connections.
- Students liked the public station area least; “they are so small that you cannot use a book there”; too crowded; jammed together; too busy
- Students wanted more electrical and Ethernet connectivity for laptops.
- Noisiness in the LC wasn’t an especially important for students but a separate quiet area would be desirable.

Subsequent to the focus groups additional study pod style furniture was purchased for a separate quiet study area. The focus group feedback confirmed that students like “buzz” and the active pace of the LC. We also provided corroborating feedback to the Library development officer regarding desirable future courtyard development.

Conclusions from Combined Data

Focus group results and observational data had more meaning in combination than in isolation. The public stations and study pod areas were used with similar frequency according to the observational data but according to the focus group results the public stations were the least favorite of all LC locations and the study pods were the favorite location for students. We learned that students wanted more computers with larger work surfaces rather than as many computers as could fit into a limited space. We learned more about why one set of lounge chairs had extremely low use (the location was too sunny and/or chairs were too close to computer stations and some students were unaware lounge chairs were even available in this location). The combined data helped us understand that the choice of seating location was at times driven by proximity to electrical or wired Ethernet access. This prompted us to rethink our assumptions about the use of wireless connectivity as students were still looking to plug in. Finally, while cell phone use is common and fairly steady, students generally feel that individuals are attuned to noise and courtesy issues themselves and do not normally require staff intervention. Complete

observational data and focus group report at <http://www.library.umass.edu/assessment/learningcommons.html>

Need for Future Assessment

While we learned much that was useful it is clear that additional questions need answering. These include:

- How does the LC contribute to learning?
- Which expectations are unmet?
- Does the LC foster a sense of community and support diversity?
- What are users doing in the space (is it many different things?)
- Are the right services provided? Do users need more/others?
- How good are the services?
- Are faculty teaching differently or noting changes they attribute to the LC?
- What impact has the LC had on teaching and faculty perceptions of the impact on student learning?
- What kind of innovation is born here?

These questions may be answered through additional qualitative and quantitative efforts. Perhaps a sociology/educational psychology study would be useful. Surveys, case studies, interviews, and other methods might all have appropriate applications. We know that future assessment will ideally combine multiple methods for greater significance. The observational data became the springboard from which to seek greater knowledge, depth, and understanding. The focus group data allowed us to draw stronger conclusions about the observational data.

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Endnotes

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Listening to Users: The Role of Assessment in Changing Library Space to Meet User Needs

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Abstract

In September 2004, New York University's Bobst Library opened four floors of renovated user space. The project was successful, in part, due to the results of several library assessments conducted before, during, and after the renovation. This paper presents the various assessment steps taken as part of a larger renovation planning effort, including assessment design and implementation; user outreach, participation and buy-in; outcomes; repurposing; and current assessment culture.

The renovation process marked a significant point of departure from the way change planning had been previously approached. Rather than presume to know what library users wanted, an assessment component was central to renovation planning. A variety of qualitative and quantitative assessment tools were used, including:

- User Activity Study—User behavior observation study that captured data on preferred study locations and furniture, laptop use, food and beverage consumption, use of library materials and use of personal materials
- Web-based user preferences survey—Designed in conjunction with an architectural firm, the survey focused on structural elements of the architecture and user preferences
- Renovation focus groups—Conducted to probe results of earlier surveys and studies
- Naming focus groups—Undergraduate, graduate and staff focus groups to determine signage and naming of library service points in the renovated areas
- Web-based follow up study to measure user satisfaction with new spaces
- Quantitative follow up analysis of renovated space usage

Our success with various assessment techniques, most notably the user activity studies and Web-

based surveys, enabled the creation of user spaces that met the needs of our user community. Perhaps more importantly, gathering and analyzing data as part of a discrete project improved staff confidence regarding assessment abilities. By using both qualitative and quantitative data, we were able to understand user needs and assess whether we met those needs. As a result, assessment has been incorporated into an increasing number of library projects, and the concept of assessment is better understood by library staff at all levels.

Introduction

The Elmer Holmes Bobst Library opened in 1972, consolidating seventeen branch libraries under one roof. Bobst Library serves as the main library for the University's Washington Square campus and can be described as a vertical library, consisting of twelve stories above ground that are built around a central atrium and two stories below ground. Bobst Library also serves as one of the few 24/7 facilities on a campus that has transformed itself from a predominantly commuter school when the library was built into a residential campus. As with many libraries built at that time, Bobst now suffers from a lack of the infrastructure required to meet the needs of today's students and curriculum. Many of the original user spaces and natural light had gradually been lost to accommodate growing collections and new services. Additionally, and perhaps unique to Bobst, the library was originally designed with very little staff and office space. The end result was that offices were constructed where and when needed, providing insufficient space for staff and having a negative impact on user space as well as infrastructure such as HVAC and lighting.

The Bobst Library renovation encompassed only the two lower levels, the first floor and mezzanine. Staff offices were created on all four floors, in addition to the rearrangement of user services and

creation of new user spaces. The lower levels were envisioned as primarily undergraduate spaces and included 24/7 study areas, group study rooms, three computer classrooms/labs, and reserve services. Computers were upgraded, productivity software installed, and wireless was enabled throughout. The main reference center underwent a major facelift, including the addition of two consultation rooms, an instructional space and the relocation of the reference desk to make it visible upon entrance to the library. The library entrance itself was redesigned to improve traffic flow. Services that no longer required public access, such as Interlibrary Loan, were relocated to provide more user space. The circulation desk was refurbished and brought into compliance with ADA standards. The remaining upper floors of library space were not included in the renovation.

As the library began the process of renovating Bobst, a library designed over thirty years ago, we involved our users in the effort. We listened, surveyed, observed, and, throughout the entire renovation process, probed to be sure that our assumptions and decisions really met user needs. User input was sought during the planning phase, as renovation was in process and post-renovation. It included:

- Web surveys to measure user preferences
- Observation surveys of library user activity
- Focus groups with undergraduate and graduate students

This paper discusses the assessment tools that were developed as part of the renovation process and the impact they had on library renovation and the development of a culture of assessment within the organization. In addition, it also presents the repurposing of one of those tools, as it became a standard tool for programmatic assessment in another area.

User Assessment Design and Implementation

The journey to library renovation began in 2002, about the same time that Bobst Library participated in the LibQUAL+® study, and received disappointingly low scores. Just as a staff meeting that devolves into a complaint session may indicate a need for more frequent communication with staff, one of the reasons for the poor LibQUAL+® results may have been that our users viewed the survey as their once-in-a-blue-moon opportunity to list every negative experience they ever had at the library. On

the other hand, it was one of the library's first steps in seeking broad user assessment of its services and the start of a library-wide effort to use that information as a baseline for remedying problems and developing new, more responsive user services. One result of the poor LibQUAL+® results was a clear call from users that the library as place was woefully inadequate. The LibQUAL+® data concerning library as place was actually a useful tool campus-wide in further emphasizing the need to make library renovation a top priority. As a result, the need and support for renovation of the 30-year old library began to take shape.

User Assessments

In their study of behavioral research methodologies as one aspect of library space planning, Potthoff and Montanelli conducted a literature review and identified several appropriate techniques, including: questionnaires, interviews, behavioral mapping, the behavioral diary and the role repertory grid procedure. These techniques "take into account the interaction of the physical areas with the patrons and staff who use them."¹ They reviewed library and behavioral science literature and concluded, "It is imperative to use more than one method of analyzing library space use in order to get valid results."² As part of the renovation planning process, in addition to the standard measurement of every square inch of the library and the development of program plans for each library service and department, the library made a concerted effort to continue to reach out to users, through a variety of these behavioral methodologies.

We conducted two Web user preference surveys, a pre-renovation Web survey in spring 2003, and another post-renovation, in spring 2005. Developed in conjunction with the architectural firm of Alspector Anderson Architects, LLP, the Web survey focused on the specifics of library use, and sought user opinions on issues as diverse as library as place, visual environment, privacy and security, navigation and signage, lighting, acoustics, furnishings, and equipment. (See Illustration 1.)

Over three hundred undergraduates, graduate students and faculty responded to the online survey within just a few days of posting. Sixty-one percent of the respondents were students and twenty-four percent were faculty. Staff and other library users comprised the remaining fifteen percent of respondents. This was a better response

rate than the 2002 LibQUAL+® study had elicited. Additionally, responses were heavily student-based, indicating a strong interest in the library when it came to evaluating library space and amenities. The majority of respondents were frequent library users: thirty-one percent used the library daily and forty-eight percent used the library at least weekly. Forty-five percent of survey respondents indicated that the library did not meet their study/research needs. Collections, deficiencies with technology and noise control were the most frequently cited issues. Users were asked to identify their favorite areas to work in the library. Of those that identified a favorite location, fewer than fifteen percent identified the lower levels as a preferred choice. Users were asked to provide three words to describe the future personality of Bobst Library. The most common responses included words related to a quiet environment (35%), comfortable furniture (23%), lighting (16%) and cleanliness (9%). Other important aspects we could provide in a renovation included improved technology and a variety of study spaces suited to different types of work. The survey results informed the architects and renovation committee's design planning and decisions regarding furniture, technology choices and study space allocation. It also gave the library a few things to work on, in addition to the renovation, especially issues such as cleanliness and lighting, and some of the less complimentary terms used to describe the overall library environment.

At the start of the renovation planning process the library had no shortage of anecdotal and impression-based information on how people actually used the library. The Web survey was one technique for getting a subset of library users to clearly identify their usage habits and preferences and "fill in" the anecdotal blanks. The library sought to supplement the self-reporting approach and triangulate those results with different data. Using a technique similar to that used in several Canadian public libraries and described by Given and Leckie, the library developed an assessment measure we named the "User Activity Study" to identify the uses that individuals actually make of the public space in the library.³ (See illustration 3.) The adoption of this observation technique was designed to gather data on library usage and to supplement the self-reporting gained in the Web survey. Additionally, it was intended to replace the purely anecdotal impressions with floor-by-floor data documenting actual usage patterns, seating

preferences, and preferred study/work areas.⁴

For the week prior to spring break, a traditionally high-use period, we conducted observational walk-throughs of the entire library three times per day, noting where library users worked, their personal work environment, and their use of library collections and equipment. We also noted the types of furniture they chose, and whether they worked alone or in groups. The count was conducted by staff from Public Services and included a pre-test to identify problems with consistent reporting and interpretation of user behavior. The actual data collection instrument was then refined based on the pre-test results.

Through this technique, we documented the multitasking nature of the millennial generation: users had cell phones, textbooks, laptops, walkmans (this was pre-iPod) and beverages (usually coffee or water). We also saw that our users were creatures of habit, frequently returning to the same places to study day after day. Users also shared tables only if they were working in groups, which created a lot of wasted space at the "four-tops" in a library where space is a premium. Even the individual studies in the library, viewed by library staff as undesirable cell-like spaces, were always fifty percent occupied during the observation period. This data was shared with the architects, the renovation advisory committee and also library-wide as a confirmation of actual usage and behavior of library patrons so that it could inform decisions regarding layout, furnishings, as well as the development of library policies related to user behavior.

Representatives from the library also met with various student groups and involved them and their peers before and during the renovation. The library formed a committee—the Bobst Renovation Advisory Committee (BRAC)—comprised of teaching faculty, students and librarians. BRAC was charged with advising the libraries' senior administration and architects in designing renovations that would serve library users' needs and match their preferred patterns of use. In addition, two library advisory groups, consisting primarily of faculty, the Professional Schools Advisory Committee and the Faculty of Arts and Sciences Committee, were used as further sounding boards at each step of the renovation process. With BRAC and the two advisory groups we learned what our users wanted in a library and what we had to change, in policies and services, as well as library spaces. We tested renovation ideas, plans,

layouts, furniture, and designs with them. These groups served to further confirm information that had been gathered in the Web survey and building sweeps and also to probe certain user observations and statements that needed further clarification.

Meetings with student groups led to focus groups that tested ideas about the renovation. Thanks to the Web survey and observation study, we conducted "focus groups with focus", i.e., the Web survey provided us with hypotheses about the direction in which to go, and the focus groups allowed us to test these hypotheses. Focus groups were asked to describe the personality of Bobst Library, something that had also been queried in the Web survey. Although users praised our collections and staff, they described the building as cold, sterile and uninviting. More specifically, they explained their needs and the library responded. For example, it became clear that group study rooms would need data jacks, white boards and an online reservation system, all of which we were able to provide. Plants and seating areas were added to the Atrium of the library to help relieve some of the "coldness" that was part of the original architectural style and make it feel more like a gathering area rather than a cavernous space to simply get through.

Once the renovation was almost complete, in the summer of 2003, our next test was to determine what to name the various renovated spaces and services. We saw this as another opportunity to involve users in the process, improve service by making the building easier to navigate and assign names that were meaningful to users. The first step in the naming process was determining the concepts we wanted to convey. These concepts included: group study, individual study, circulation, reference, study lounge, technology friendly, technology free,⁵ silent, reserve, computer lab, photocopier area, food lounge, and networked printing. We began by surveying names used by other libraries, although this ultimately proved to be the least helpful part of the endeavor. We convened focus groups—first of Bobst library staff, then several groups comprised of either graduate or undergraduate students. Our goal was to determine appropriate names for newly renovated spaces and signage that was meaningful to users. Our biggest surprise was that library staff were much more creative and "out there" with names for locations and services than students. Library users actually preferred direct, descriptive (and sometimes traditional) names rather than anything cute. So,

while circulation staff advocated that the sign at the circulation desk say, "borrow/return" or "book checkout," users unanimously agreed that the sign should simply say, "circulation." Similarly, staff generally thought that the term "zone" was useful to describe an area, as in "food zone," or "quiet zone" but graduate students disliked that choice. And, while a millennial generation stacks staff member suggested that we call it a "nutrition station," the area in our library where food consumption is allowed was simply named "snack lounge" at the suggestion of the focus groups. Users wanted literal names, and disliked anything they perceived as jargon, like, "electronic," "WI-FI zone," or "cyber." Our users saved us from making choices that would look dated even a few years later and this experience reinforced our recently acquired knowledge that we should involve them in decisions that directly affect them.

Outcomes

In their articles about library renovations, Shill and Tonner write that: "... There are no systematic, empirical studies documenting the impact of enhanced library buildings on student usage of the physical library. . . . Librarians must rely on limited, anecdotal evidence of postconstruction usage increases."⁶ Their articles attempt to address the issue of identifiable "success measures" for renovation and the impact of these improvements on the usage of the library that can be used by others during the process of value engineering, which inevitably comes up in any renovation process. They write that by identifying the specific characteristics and features of a renovation that are most likely to increase usage and meet user needs, library renovation teams "can better determine which features are most important to retain in 'value engineering,' when budget limitations require that facility features be eliminated or scaled back."⁷

Shill and Tonner found that "... The great majority of new and improved libraries have experienced sustained increases in usage of the physical facility . . . and students continue to use an improved facility even after the novelty of a new library has worn off."⁸ Their studies attempt to use accepted library metrics, e.g., exit gate count, total circulation, in-house collection use, and reference transactions to identify features of library renovations from 1995-2002 that correspond to increases in these accepted library use metrics. Based on the data, they identified the following

renovation features as having a demonstrated impact on subsequent library usage: data ports, seating with wired network access, public access computers, quality of library instruction lab, quality of telecommunications infrastructure, user work spaces, layout; HVAC system, and overall facility ambience.⁹ The Bobst Library renovation included most of these features. Library exit counts had been in decline for several years prior to the renovation. After the renovation, Bobst Library exit data registered a twelve percent increase in traffic the year the renovation opened and a seventeen percent increase the following year. Reference usage, which had also been in decline, surged forty percent the first year, but had settled down by year two of the renovation. There were no discernible trends in either circulation or in-house usage, which was not surprising as the upper stacks floors were not included in the renovation.

Interestingly, Shill and Tonner found little correlation between presence of high-end wiring system and wireless communication systems, number of group study rooms, or presence of general computer labs and snack lounges as having a significant impact on usage. It should be noted however, that the Shill and Tonner study ended with renovations in 2002, before the increase in student laptop usage, prevalence of wireless computing and growth of in-house cafes. Comments from users on the post-renovation survey indicate that wireless is one of the more popular features of the renovation. It may be that subsequent studies of more recently renovated library facilities will document a different impact of some of these features as well.

In addition to looking at the library metrics identified by Shill and Tonner, Bobst Library went back to users for their assessment of the renovation. A second, post-renovation Web survey was administered. The pre-renovation Web survey was redesigned to gather user response to the renovation. New questions were added to measure satisfaction with new features such as the snack lounge and we also took the opportunity to add a

few questions concerning the new food and beverage policy, cell phones, lockers and library outreach. Although there were fewer responses than the earlier Web survey, the library once again heard quickly from users. Seventy-three percent of the respondents were students, eight percent were faculty, and staff and other library users comprised the remaining nineteen percent. As before, the majority of respondents were frequent library users, although the response from daily library users increased from thirty-one percent to forty-six percent. Thirty-six percent of respondents used the library at least weekly and forty-three percent indicated that the renovation had increased their visits to the library. Thirty-five percent indicated that their favorite place to study had changed due to the renovation. (See Illustration 2.)

Fifty-four percent of those responding indicated that the lower level renovations now met their needs. User response to specific post-renovation services indicated general satisfaction with most of the changes. Temperature control, acoustics/quiet (especially from and in group study rooms), photocopiers, and power outlets elicited the greatest dissatisfaction. Users also commented on the snack lounge food selections. As a result, the library has taken the following post-renovation steps:

- Retrofitted all group study rooms with additional sound-proofing
- Installed new photocopiers
- Installed additional power outlets throughout the lower levels
- Added new food choices to the snack lounge

Outreach questions in the post-renovation survey focused on users' awareness of where to seek assistance and where to find specific services such as laptop loaners, photocopy machines, printing, wireless and areas for quiet study. Thirty percent of respondents were unaware of the library's laptop loaner program, while seventy-six percent always knew where to find computers for e-mail.

Table 1. Post-Renovation Survey Responses—Do You Know Where to Find . . . ?

Where to find...	Always	Sometimes	Unaware	Don't use
Computers for email	76%	14%	4%	6%
Computers for productivity software	53%	25%	8%	14%
Group study rooms	48%	19%	7%	26%
Laptop loaners	28%	7%	30%	36%
Photocopiers	63%	29%	4%	4%
Power for laptops	27%	37%	12%	24%
Printing	42%	30%	12%	16%
Wireless	28%	20%	14%	38%
Quiet study	45%	45%	5%	5%

Table 2. Post-renovation Survey Responses—Do You Know Where to Get Assistance with . . . ?

Where to get assistance with...	Always	Sometimes	Unaware	Don't use
Locating a book or journal	57%	27%	8%	8%
Research questions	40%	34%	14%	13%
Term papers	21%	17%	22%	40%
Photocopiers	33%	39%	19%	8%
Printing	32%	31%	20%	16%
Computers	32%	29%	24%	15%

It became clear that users were much less aware of where and how to seek assistance. The results of the post-renovation survey were shared with staff and used to better focus outreach efforts, Web page content, signage and service development.

Bobst Library participated in the LibQUAL+®

study again in 2006, with greatly improved results. In the LibQUAL+® 2002 results, all respondents unanimously perceived existing library space as unsatisfactory. The lower level renovation was designed for undergraduates and the 2006 LibQUAL+® response (both quantitative and

qualitative) indicated that library users viewed it the same way. By 2006 undergraduates found library space to be more than adequate, moving from a negative adequacy rating of -0.16 in 2002 to a positive adequacy rating of +0.43 in 2006. Undergraduates, however, continue to highly value library as place and in spite of the renovations, the library has a long way to go in meeting their desired expectations. It appears that a renovation that was primarily oriented to undergraduate needs has actually increased graduate student dissatisfaction with the upper floors, the primarily "graduate floors," of Bobst library. In 2002, graduate students gave the library an inadequate rating of -0.16 but by 2006 it had increased to -0.30. Written comments from graduates indicated satisfaction with the renovated areas, and a strong desire that the upper floors of the library receive the same attention. It should be noted as well, that both groups' minimum and desired expectations for library as place increased from 2002 to 2006, so that even with the renovation's impact on the perception of library as place, there is still a long way to go to satisfy users. Just as the 2002 LibQUAL+® results were presented campus-wide, the 2006 results are now being presented as part of other assessment studies conducted by the library in its effort to design space and services for the 21st century scholar.

Repurposing the User Activity Study

In summer 2004, Bobst Library created the Quality of Life Committee (QLC) and charged it with reviewing the current food, drink and noise policies in effect and creating new policies, signage, and promotional plans to be implemented in fall 2004, simultaneously with the opening of the renovated areas. Based on the data gathered in the original user activity study that indicated that many users were drinking beverages in the library without damage or incident, the new committee was also charged with devising and rolling out a more tolerant policy towards consumables. The charge was quite specific, and included directives such as:

- Developing a new cell phone awareness campaign and signage, including the designation of cell phone free and friendly areas;
- Developing a beverage and food policy that required the use of spill-proof containers and clarified food policy, including the designation food friendly areas;
- Developing appropriate guidelines for laptop

usage that accommodated the needs of those who required absolute quiet (e.g., no keyboard noise) with laptop users desiring a quiet place to use their laptop;

- Presenting draft recommendations to department managers for feedback and comment;
- Reviewing and assessing the new program's strengths and weaknesses, and making improvements, if necessary, in summer 2005.

It was a tall order in a very short time span. The new policy was launched at the beginning of the 2004-2005 academic year, at the same time the renovated spaces opened.

Since QLC needed to measure outcomes several months after the new policies were introduced, the group needed a baseline measurement of user behavior regarding various quality of life issues. Outcomes measurement was something new for Bobst Library, and the QLC committee had not included it prior to launching the new policy, i.e., baseline measurements were not initially taken. The original user activity study conducted for renovation, however, was an acceptable, albeit imperfect, baseline measurement. It was modified somewhat, as the QLC's intent was slightly different than the original survey. Data worksheets were simplified and some data elements, such as materials use or group study activities were not included. As a result, the worksheets were less complicated and more focused on QLC issues than the original survey. (See Illustration 4.)

The original observation study did not provide a fully comprehensive baseline for QLC purposes. At the time of the original study, (the previous year) no food or beverages were allowed in the library, but the new policy allowed drinks in most areas of the library as long as covered cups were used. So, for purposes of comparison, the Committee combined all instances of food and drink recorded on the original user activity survey as "rule breaking" to compare to the 2005 follow-up study. Also, original data taken on cell phones did not record cell phone use, but merely if a user had a cell phone at his or her work area (cell phones were still a novelty when the original study was conducted, and had not yet become disruptive in the library). So, the baseline data for cell phone use wasn't comparable to the follow up study. The QLC study determined that users were abiding by the library's cell phone policy ninety-nine percent of the time. We assume this was due in large part to the

library's architecture—which includes balconies on the stacks floor separated from the stacks areas by glass walls—which make it easy for users to leave stacks and study areas and comply with the policy. (See Illustration 5.) Additionally, based on study observations, the QLC recommended that the library install balcony seating to further encourage cell phone use in that location. The Committee also found that food and drink non-compliance was reduced in most areas as a result of the new policy and reduced library wide, from twenty percent of users in violation of the food and drink rules before the new policy was introduced to thirteen percent once the new policy was in place. (See Illustrations 6 and 7.)

The Quality of Life committee is a good example of a library committee that incorporated assessment into its activities, and an example of Bobst's efforts to build a culture of assessment. QLC repeated the user activity survey in 2006 and has used the results to improve communications about its food and drink policy, with users and library staff as well. As a result of measuring compliance with the food and drink policies, the QLC adjusted its public relations campaign to maintain its efficacy. QLC also used data to address the need for additional cleaning in the library; kept the food and drink publicity campaigns fresh and effective with new signage and outreach activities each academic year; and created a class of student worker (the "Rover") who not only remind users of QLC policies, but provide assistance in traditionally unstaffed areas.

Building a Culture of Assessment

NYU Libraries participated in the first ARL "Making Library Assessment Work" consultancy as part of an ongoing effort to build assessment into the library's planning and development activities. Each of the efforts described in this paper were an effort to build an assessment program and actively incorporate user input into library decision-making and programming. Our user-centered approach to renovation started the library thinking in different ways that not only led to a successful renovation, but to successes in other library projects.

Assessment has been utilized as a team building effort within some library departments. In many ways, the history of Bobst Library's organizational culture is ironic considering that the building's original purpose was to bring library services together, but the vertical nature of the physical facility, in addition to the organizational construct, made this especially challenging in regard to staff

communication and unity. More recently, staff at all levels complained of working in "silos" metaphorically (and in some cases physically) separate from their colleagues, which echoes one of the issues that led NYU to create the Bobst Library in the early 1970's. In an effort to overcome this and with the goal of bringing staff with different job assignments together around a common purpose, the Access Services department convened several work groups around specific problem-solving issues. The groups included members from each Access Services unit (Circulation, Library Privileges, Interlibrary Loan, Stacks Maintenance, and Reserve/Microforms) and were charged with investigating an issue, problem or potential service improvement. Work groups were convened to:

- Study the efficacy of the book search process
- Plan a project to install security tags in 600,000 volumes
- Plan the roving library assistant program

Each work group introduced measurement and assessment to staff in a very practical way, and exit surveys completed by work group participants at the conclusion of the project indicate that all participants had gained some level of appreciation for the use of statistical methods in decision making. While further data collection on the effect of work groups on staff functioning is needed, initial observations as well as the exit survey results showed that work groups appear to be changing the way Access Services staff work together.

Through the anonymous survey, five of the eight participants in one work group reported to be more comfortable approaching a fellow member of that work group as a result of their work group experience. Perhaps more amazing, three of the eight participants in a work group reported that they were also more comfortable approaching their library colleagues overall as a result of work group participation. Additional evaluation is needed, and the work group model is continuing with the intent of involving all Access Services staff by the end of the academic year.

Conclusion

The assessment activities conducted as part of renovation planning insured the success of creating spaces with value to our users, and served as a training ground for library administrators and staff to use assessment for service improvements and also for team building within staff. As a result, the library now solicits feedback from users more

routinely, and receives more balanced, constructive information as a result. The library uses the feedback it receives, and users are aware that the library will listen to them even if the response is not immediately apparent, so a clear two-way channel of communication is now in place. Solicitation of user input has now become standard in library efforts as diverse as library instruction, Blackboard services, reference services, strategic planning, and a continuing planning effort to develop a strategy for renovating the remainder of the library to meet the needs of graduate students and faculty. Because so many library employees were involved in various stages of the renovation, and because they saw the direct connection between assessment and a successful project, staff are more receptive to incorporating library assessment in their activities. As was done with the Quality of Life Committee, an increasing number of committee charges now include assessment as a critical component. The work group model is continuing to involve all Access Services staff, and we hope to expand it across library departments and divisions. While there is still a way to go, we are working toward creating a culture of assessment at Bobst that is integrated into all activities and not simply a "stand-alone" activity.

Perhaps the best judgment of the Bobst Library renovation success at involving and listening to users is that which comes from the users themselves. Potthoff and Montanelli write that "the process of surveying the user population and addressing library space needs can be turned into a public relations advantage if the user community can be involved in developing support for library needs."¹⁰ Certainly the improved LibQual+® 2006 results and the response to the post-renovation survey were indicators of the renovation's success. For NYU's Bobst Library, however, there were two other, more qualitative, indicators. In an editorial in the *Washington Square News*, NYU's student paper, the renovated areas were praised as "light, state-of-the-art and, most importantly, inviting. . . . [and] so far, NYU has gotten it just right."¹¹ And finally, the Library, for the first time in its thirty-year plus history, was the recipient of the NYU Class of 2005 legacy gift, that raised money for the newly renovated Snack Lounge. Could you ask for more?

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Endnotes

1. Joy K. Potthoff and Dale S. Montanelli, "Use of Library Facilities: Behavioral Research as a Tool for Library Space Planning," *Journal of Library Administration* 12, no. 1 (1990): 49.
2. *Ibid.*, 58.
3. Lisa M. Given and Gloria J. Leckie, "'Sweeping' the Library: Mapping the Social Activity Space of the Public Library," *Library & Information Science Research* 25, (2003): 365-85.
4. *Ibid.*; Gloria J. Leckie and Jeffrey Hopkins, "The Public Place of Central Libraries: Findings from Toronto and Vancouver," *Library Quarterly* 72, no. 3 (2002): 326-72.
5. At the beginning of the renovation process we received significant user feedback that laptop keyboard noise was disruptive for users. As a result, our original intention was to create separate spaces for technology use and more traditional library use. As the process evolved, however, it became unnecessary to segregate technology.
6. Harold B. Shill and Shawn Tonner, "Creating a Better Place: Physical Improvements in Academic Libraries, 1995-2002," *College and Research Libraries* 64, no. 6 (November 2003): 435.
7. Harold B. Shill and Shawn Tonner, "Does the Building Still Matter? Usage Patterns in New, Expanded, and Renovated Libraries, 1995-2002," *College & Research Libraries* 65, no. 2 (March 2004): 149.
8. *Ibid.*
9. *Ibid.*, 123-150.
10. Potthoff and Montanelli, "Use of Library Facilities," 59.
11. Russell Berman, "NYU Right On with Bobst Renovations," *Washington Square News* (20 September 2004): 2.

Illustration 1

NYU Bobst Library Renovation Survey Spring 2003

Project Overview

The Elmer Holmes Bobst Library is scheduled to undergo extensive renovation over the next few years. The work is to be realized in phases. The first phase is projected to renovate and refurbish Levels A, B, 1 and the Mezzanine, including upgrading central environmental control and infrastructure systems. Later phases will encompass Floors 2 through 10.

The goal of the renovation is to ensure that the users of Bobst Library have attractive, comfortable, convenient space for their study and research, now and in the future. The renovations will provide Bobst with a twenty-first century infrastructure and the flexibility to easily and gracefully accommodate current and future digital information technology alongside its print, multi-media and special collections.

NYU Community Input

NYU has engaged Alspector Anderson Architects, LLP, to provide design services for these renovations. The project team seeks critical input from the general NYU Community in order to consider the diverse needs, desires and visions of library users. The information gathered by this survey will help guide and inform both tangible and intangible aspects of one of the most important facilities on campus.

As Winston Churchill stated so aptly: "We shape our buildings: thereafter they shape us."

Your valuable input will help shape your library and your future!

Please fill out the following information. No personal information will be collected; this survey is anonymous.

University Status (check all that apply):

☐ Part-time ☐ Full-time ☐ Undergraduate ☐ Graduate ☐ Faculty ☐ Staff ☐ Other:

Discipline:

Library Usage

1. How often do you visit Bobst Library?

☐ Daily ☐ Weekly ☐ Monthly ☐ Twice/semester ☐ Once/semester ☐ Other

2. What time of day do you most often visit the library? Check all that apply.

☐ Morning (8am to noon) ☐ Afternoon (noon to 5pm) ☐ Evening (5pm to 10pm) ☐ Late Night (10pm to 8am)

3. Why do you visit the library? Check as many as apply.

☐ Check out a book	☐ Search the online catalog ("BobCat")
☐ Receive research assistance	☐ Use computer labs
☐ Use general materials	☐ Borrow/use a laptop
☐ Use reference materials	☐ Use library computers
☐ Use course reserves materials	☐ Access the Internet
☐ Use archives/special collections	☐ Attend classes
☐ Use periodicals/journals	☐ Meeting place with friends/peers
☐ Use audio/visual resources (videos, DVDs, music)	Other (describe):
☐ Individual study/research	
☐ Group study/collaboration	

4. Does the Library currently meet your study/research needs? ☐ Yes ☐ No
If no, where does Bobst fall short?

LIBRARY ENVIRONMENT

5. In which areas of the library do you study/work? Check all that apply.

☐ A level	☐ Stacks/stacks areas/bookshelves
☐ B Level carrels	☐ 6 th or 9 th floor Reference Centers
☐ B Level tables	☐ 8 th floor reading room
☐ B Level computers	☐ Other reading rooms (floors 2, 4, 6 and 10)
☐ 1st floor tables/carrels	☐ Small study rooms
☐ Mezzanine carrels	☐ Other (describe):

6. Do you have a favorite place(s) for working in Bobst? ☐ Yes ☐ No
If yes, where?

7. How do you get to your favorite place?

- ☐ Stairs ☐ Elevators ☐ Both stairs and elevators ☐ Neither

8. If you use the stairs, how many flights are you willing to walk? ☐ Up: ☐ Down:

9. To facilitate your work in the library and to feel comfortable, what would you like the personality (i.e., general ambiance) of Bobst Library to be?

List up to three words:

SIGNAGE

10. How do you find your way from place to place? (Check as many as apply.)

- ☐ signage or directories ☐ library map guides ☐ On-line web tour ☐ Ask library staff for directions
☐ Other (please specify)

SERVICES

11. How desirable would the following features/services be to your usage of the library?

	Very desirable	Somewhat desirable	Not needed	Not desirable
Wireless computer access throughout much of the building	☐	☐	☐	☐
Lockers for temporary use	☐	☐	☐	☐
Power outlets	☐	☐	☐	☐
Group study spaces that may be reserved in advance	☐	☐	☐	☐

List any other amenity that would be very desirable:

12. Which 3 items listed above are most important to you?

13. How important are the following design features for your comfort in the Library?

	Very important	Somewhat important	Not important	Very unimportant
Views to Interior Spaces	☐	☐	☐	☐
Views to Exterior	☐	☐	☐	☐
Privacy	☐	☐	☐	☐
Quiet environment	☐	☐	☐	☐

14. Please rate the following attributes of Bobst Library:

	Very satisfied	Somewhat satisfied	Dissatisfied	Very dissatisfied
Personal Security	☐	☐	☐	☐
Lighting	☐	☐	☐	☐
Acoustics/Quiet	☐	☐	☐	☐
Ability to concentrate	☐	☐	☐	☐
Temperature/Climate	☐	☐	☐	☐

15. Are there any areas that stand out (good or bad) in terms of safety, lighting or acoustics? Please specify:

Furnishings:

16. In the areas that you most often use, rate your preferred seating type:

	Really like	Like	Dislike	Really dislike	No opinion
Carrels	☐	☐	☐	☐	☐
Chairs	☐	☐	☐	☐	☐
Tables	☐	☐	☐	☐	☐
Computer Workstations	☐	☐	☐	☐	☐
Lounge seating	☐	☐	☐	☐	☐

17. Describe the environments, including the furniture, that you feel most comfortable working in depending on your tasks:

FOOD AND DRINK

18. A break room with vending machines is planned adjacent to the B Level 24 hour Reading Room. Would you use the break room? ☐ Yes ☐ No

If so, what for? Check as many as apply.

☐ Meet friends ☐ Study ☐ Access E-Mail ☐ Rest ☐ Eat ☐ Drink ☐ Get Supplies (pens, pencils, etc.)

OTHER ISSUES

19. Is there anything that would make you increase or decrease your library usage? ☐ Yes ☐ No

If so, what?

Comment and provide input on any other issues important to Bobst Library and it's renovation program:

Thank you for completing this survey!

Illustration 2

**NYU Bobst Library Renovation Survey
Spring 2005****Project Overview**

The Bobst Library recently completed Phase I of renovation, which included Lower Levels 1 and 2, the first floor and the mezzanine. We are beginning to plan for later renovation phases that will encompass floors 2 through 10, including the Avery Fisher Center, Special Collections, the reference centers, north reading rooms and the stacks.

The goal of all phases of renovation is to ensure that the users of Bobst Library have attractive, comfortable, productive space for their study and research, now and in the future. The renovations will provide Bobst with a twenty-first century infrastructure and the flexibility to easily and gracefully accommodate current and future digital information technology alongside its print, multimedia and special collections.

NYU Community Input

Prior to Phase I renovation we conducted an online library user survey. We are seeking input from the general NYU community again to help evaluate Phase I renovation and begin gathering information on the diverse needs, desires and visions of library users for the later phases. The information gathered by this survey will help guide and inform both tangible and intangible aspects of one of the most important facilities on campus.

Your valuable input will help shape your library and your future.

Please complete the following information. No personal information will be collected. This survey is anonymous. Thank you for taking the time to give us your thoughts.

University Status (check all that apply):

☐ Part-time ☐ Full-time ☐ Undergraduate ☐ Graduate ☐ Faculty ☐ Staff ☐ Other:

Discipline:**Library Usage****1. How often do you visit Bobst Library?**

☐ Daily ☐ Weekly ☐ Monthly ☐ Twice/semester ☐ Once/semester ☐ Other

2. What time of day do you most often visit the library? Check all that apply.

☐ Morning (8am to noon) ☐ Afternoon (noon to 5pm) ☐ Evening (5pm to 10pm) ☐ Late Night (10pm to 8am)

3. Has the renovation increased your visits to the library? ☐ Yes ☐ No

Please explain:

4. Did you use the library prior to the renovation? ☐ Yes ☐ No

5. Why do you visit the library? Check all that apply.

☐ Check out a book	☐ Search the online catalog ("BobCat")
☐ Receive research assistance	☐ Use computer labs
☐ Use general materials	☐ Borrow a laptop
☐ Use reference materials	☐ Use a laptop
☐ Use course reserves materials	☐ Use library computers
☐ Use archives/special collections	☐ Wireless access
☐ Use periodicals/journals	☐ Access the Internet
☐ Use audio/visual resources (videos, DVDs, music)	☐ Check email
☐ Do research	☐ Attend/teach classes
☐ Individual study	☐ Meet with friends/colleagues/students
☐ Group study	Other (describe):

6. If you use Bobst Library in person less than once a month, why? Check all that apply.

- ☐ Library resources not needed for my work ☐ Library hours not convenient ☐ I find all information on the web ☐ Bobst Library doesn't have what I need ☐ I use other NYU libraries ☐ I use other non-NYU libraries ☐ Other (please specify):

Library Environment**7. In which areas of the library do you study/work? Check all that apply.**

☐ LL2 Study area	☐ 1st floor Reference Center
☐ LL2 Computers	☐ Mezzanine
☐ LL1 Study area	☐ Stacks/stacks areas/bookshelves
☐ LL1 Computer classroom	☐ 6 th or 9 th floor Reference Centers
☐ LL1 Computers	☐ 8 th floor reading room
☐ Snack Lounge	☐ Other reading rooms (floors 2, 4, 6 and 10)
☐ Group study rooms (LL1 or LL2)	☐ Small study rooms (floors 2 – 10)
☐ Individual study rooms (LL2)	☐ Fales Library
☐ Avery Fisher Center	☐ Bobst Gallery
☐ Tamiment Library/Wagner Archives	☐ Other (describe):

8. Do you have a favorite place(s) for working in Bobst? ☐ Yes ☐ No
If yes, where?**9. Has your favorite place changed since the renovation? ☐ Yes ☐ No**
Please explain:**Features/Services****10. Please rate the following in Lower Levels 1 & 2:**

	Very satisfied	Satisfied	Dissatisfied	Very dissatisfied	Unaware of	Don't Use
Ability to concentrate	☐	☐	☐	☐	☐	☐
Access to library for users with disabilities	☐	☐	☐	☐	☐	☐
Acoustics/Quiet	☐	☐	☐	☐	☐	☐
Chairs	☐	☐	☐	☐	☐	☐
Computers w/Internet access	☐	☐	☐	☐	☐	☐
Computers w/Word, Excel, PowerPoint	☐	☐	☐	☐	☐	☐
Help from library/computer center staff	☐	☐	☐	☐	☐	☐
Lighting	☐	☐	☐	☐	☐	☐
Lockers	☐	☐	☐	☐	☐	☐
Microform reader/printers	☐	☐	☐	☐	☐	☐
[Personal Security]	☐	☐	☐	☐	☐	☐

PHOTOCOPIERS	☐	☐	☐	☐	☐	☐
Power outlets	☐	☐	☐	☐	☐	☐
Printing	☐	☐	☐	☐	☐	☐
Signs and directional aids	☐	☐	☐	☐	☐	☐
Snack Lounge	☐	☐	☐	☐	☐	☐
Study space for groups	☐	☐	☐	☐	☐	☐
Study space for individuals	☐	☐	☐	☐	☐	☐
Temperature/Climate	☐	☐	☐	☐	☐	☐
Vending area	☐	☐	☐	☐	☐	☐
Wireless access	☐	☐	☐	☐	☐	☐

11. Which 3 items listed above are most important to you?

12. Do Lower Levels 1 & 2 currently meet your study/research needs?

☐ Yes ☐ No

13. If no, where do the areas fall short?

☐ Group study ☐ Computers ☐ Power supply for laptops ☐ Printers ☐ Individual study space ☐ Personal assistance ☐ Other:

14. Please rate the following in 1st floor Reference Center and the mezzanine:

	Very satisfied	Satisfied	Dissatisfied	Very dissatisfied	Unaware of	Don't Use
Ability to concentrate	☐	☐	☐	☐	☐	☐
Access to library for users with disabilities	☐	☐	☐	☐	☐	☐
Acoustics/Quiet	☐	☐	☐	☐	☐	☐
Chairs	☐	☐	☐	☐	☐	☐
Computers w/Internet access	☐	☐	☐	☐	☐	☐
Help from library staff	☐	☐	☐	☐	☐	☐
Lighting	☐	☐	☐	☐	☐	☐
Personal Security	☐	☐	☐	☐	☐	☐
Photocopiers	☐	☐	☐	☐	☐	☐
Power outlets	☐	☐	☐	☐	☐	☐
Printing	☐	☐	☐	☐	☐	☐
Signs and directional aids	☐	☐	☐	☐	☐	☐
Study space for individuals	☐	☐	☐	☐	☐	☐
Temperature/Climate	☐	☐	☐	☐	☐	☐

15. Which 3 items listed above are most important to you?

16. Do the 1st floor & Mezzanine areas currently meet your study/research needs? ☐ Yes ☐ No

17. If no, where do they fall short?

☐ Group study ☐ Computers ☐ Power supply for laptops ☐ Printers ☐ Individual study space ☐ Reference collections ☐ Personal assistance ☐ Other:

Food and Drink

18. A Snack Lounge with vending machines is located on LL1. Do you use the area?

☐ Yes ☐ Unaware of ☐ Don't use

19. If yes, what for?

☐ Meet friends ☐ Study ☐ Access E-Mail ☐ Rest ☐ Eat ☐ Drink
☐ Buy snacks, coffee ☐ Other:

20. How often?

21. If you use the vending area, are there additional foods/drinks you'd like to see offered?

☐ Yes ☐ No

22. If yes, what would you like?

Other Issues

23. Do you know where in the library to find:

	Always	Sometimes	Unaware of	Don't use
Computers for email	☐	☐	☐	☐
Computers for Word, Excel, PowerPoint	☐	☐	☐	☐
Group study rooms	☐	☐	☐	☐
Laptops to check out	☐	☐	☐	☐
Photocopy machines	☐	☐	☐	☐
Printing	☐	☐	☐	☐
Quiet study areas	☐	☐	☐	☐
Wireless access	☐	☐	☐	☐

24. Do you know how to get assistance with:

	Always	Sometimes	Unaware of	Don't use
Computers	☐	☐	☐	☐
Locating a book or journal	☐	☐	☐	☐
Photocopy machines	☐	☐	☐	☐
Printing	☐	☐	☐	☐
Research questions	☐	☐	☐	☐
Term papers	☐	☐	☐	☐

25. Have you reserved a group study room in Bobst Library?

☐ Yes ☐ No ☐ Unaware of ☐ Don't use

26. If yes, were you satisfied with the:

Online form ☐ Yes ☐ No ☐ Don't use

Group study room ☐ Yes ☐ No

Study room policies ☐ Yes ☐ No

If no to any of these, please explain:

27. Bobst Library has recently introduced a new covered drink policy. Has the new drink policy improved the quality of your research/study life in the library?

☐ Yes ☐ No ☐ No difference ☐ Not applicable

28. Bobst Library has both "cell phone friendly" and "cell phone free" areas. Do you use a cell phone in the library?

☐ Yes ☐ No

29. If yes, where in the library do you use your cell phone? Check all that apply.

☐ Stacks ☐ Balconies ☐ Stairways ☐ Benches near the elevators ☐ Atrium
☐ Gallery ☐ Reading Rooms (floors 2-10) ☐ LL1 or LL2 ☐ Reference Center
☐ Other:

30. How do you learn about library services and collections? Check all that apply.

☐ LibLink ☐ Signs in the library ☐ Friends/Colleagues ☐ Library webpage ☐ Teachers/Professors
☐ Other:

31. If you could change one thing about Bobst Library, what would it be?

Please comment on any other issues important to Bobst Library and the renovation – either past or future - that may help us:

Thank you for participating in the NYU Bobst Library survey

Illustration 3

User Activity Study Sample Intake Form with Tallied Values Entered

	4th floor								
	East wing		South wing		West wing		North wing	Catwalk	Floor Total
	Perimeter	Atrium	Perimeter	Entry	Perimeter	Atrium			
Seating									
carrel	3	6	10	2		10	18		49
table	9		14		9		44		76
small study-1 person	5				5				10
small study-2 people	5				6				11
other				4			1	5	10
Total Seating:	22	6	24	6	20	10	63	5	156
Activities									
using personal materials	16	5	17	1	15	10	55		119
using library materials	3	2	6		2	2	11		26
using laptop	6		6		2		5		19
using library computer		1		3					4
working in a group	3			3	3				9
other	2							1	3
eating/drinking	4	2	10		8	6	30		60
cell phone	1	2	4		1	7	13	5	33

Illustration 4

Sample QLC User Activity Study with Tallied Values Entered

	Snack	W. Side Wood Rm	Group Study*	E. Side Computer Commons	BLCC Lounge	Day Total by Type
Seating (1 per user)						
comfy chair						0
group table	5	2	13			20
counter		2		4		6
Public PC				9		9
other		3				3
Total	5	7	13	13	0	38
Activities (check all that apply)						
eating	2		2			4
drinking-covered	3	3	6	5		17
drinking-uncovered	1			1		2
cell phone use						0
notes on general cleanliness, trash can fullness, etc.			1 messy w/ drinks			0
Total	6	3	8	6	0	23

Illustration 5

Cell Phone Use—Bobst Library during Spring 2005 Sample Week

Floor	Cell Phone Use Observed in Stacks/study Areas	Cell Phone Use Observed in Approved Cell Phone Areas	Total Library Users	% of Library Users Speaking on Phones in Stacks/Study Areas	% of Library Users Speaking on Phones in Approved Areas
10	0	6*	142	0%	4%
RR 10	0	0	149	0%	0%
9	6	9	688	<1%	1%
8	6	40*	735	<1%	5%
RR 8	0	0	625	0%	0%
7	4	7	463	<1%	1%
6	8	26	789	1%	3%
RR 6	1	0	431	<1%	0%
5	5	8	571	<1%	1%
4	2	7*	457	<1%	1%
RR 4	0	0	349	0%	0%
3	0	5	234	0%	2%
2	0	17*	147	0%	11%
RR 2	3	0	187	1%	0%
AFC	0	0	453	0%	0%
Ref 1	5	0	574	<1%	0%
Mez	0	0	128	0%	0%
LL1	24	22	1772	1%	1%
LL2	17	0	1794	<1%	0%
Library Wide	81	147	10,688	<1%	1%

Cell Phone use 2005 (cell phone use includes ringing or talking)

*10th, 8th, 4th and 2nd floors are equipped with a bench, installed as a location for cell phone users. We observed many people using these benches, either for cell phone use or other purposes.

Illustration 6

Beverage Consumption—Bobst Library during Spring 2005 Sample Week

Floor	Total Users	Drinking Observed (uncovered)	Drinking Observed (covered)	% of Users Drinking (uncovered)	% of Users Drinking (covered)
10	142	5	32	3%	23%
RR 10	149	9	65	6%	44%
9	688	41	243	6%	35%
8	735	42	206	5%	28%
RR 8	625	32	262	5%	42%
7	463	15	183	3%	40%
6	789	44	243	7%	31%
RR 6	431	21	191	4%	44%
5	571	15	194	2%	34%
4	457	17	178	3%	39%
RR 4	349	9	172	2%	49%
3	234	11	64	4%	27%
2	147	2	42	1%	29%
RR 2	187	12	54	6%	29%
AFC	453	4	31	<1%	7%
Ref-1	574	6	35	1%	6%
Mez	128	4	34	3%	27%
LL1	1772	82*	636	4%	36%
LL2	1794	132	549	7%	31%
Library Wide	10,688	503	3414	4.7%	32%

*includes only those drinking uncovered drinks outside of the snack area

Illustration 7

Food Consumption—Bobst Library during Spring 2005 Sample Week

Floor	Food Observed	Total Users	% of Users with Food
10	10	142	7%
RR 10	7	149	5%
9	74	688	11%
8	74	735	10%
RR 8	61	625	10%
7	66	463	14%
6	81	566	14%
RR 6	29	431	7%
5	44	571	8%
4	31	457	7%
RR 4	39	349	11%
3	16	234	7%
2	13	147	9%
RR 2	9	187	5%
AFC	6	453	1%
Ref-1	17	574	3%
Mez	5	128	4%
LL1*	143	1772	8%
LL2	171	1794	10%
Librarywide	896	10,688	8%

*includes only those eating outside of snack area, not the 873 eaters in snack area

Net Generation Students and the Library as Place

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Abstract

This research project is grounded in the assumption that the needs and expectations of library users have fundamentally changed and librarians must comprehend this change and adapt their practices to accord with this new user culture. This study investigates Net Generation students and their attitudes and views toward the library as place. The goal of this study is to better understand and incorporate students' needs and expectations into the planning and implementation of new roles, services, and uses of the library. This research project uses Q-methodology to discover different opinion types among college students. To the extent librarians better understand what students think about the library, from their own points of view, and how they learn and use the library, they are in a better position to ask the right questions when evaluating roles, spaces, and services.

Introduction

Today's undergraduate students have grown up with computers and video games as a part of their everyday lives. Much attention has been paid to how these technologies and other influences have affected the learning styles and preferences of college students.¹ Responding to this environment, libraries are in the midst of searching for ways to match their evolving roles to the expectations and needs of undergraduate students.² Recent reports finding a decline in academic library use have stimulated an on-going discussion about the future of the academic library.³ This paper investigates Net Generation students and their attitudes and views toward the library as a place for teaching, learning, and research. Why do students enter the library? What services and technology do they expect? How does the library add value to their academic experience? These are a few of the questions this paper investigates.

Academic libraries have done a reasonably good

job of collecting use and satisfaction data from their users.⁴ In recent years, academic libraries have been charting service quality with LibQUAL+®.⁵ While LibQUAL+® is a valuable tool for measuring service quality, it does not expose the variety of subjective viewpoints that users may have toward the library and its services. This paper reports the results of a 2006 study of undergraduates using Q-Methodology. Q is a hybrid of qualitative and quantitative statistical techniques, and provides a method for the scientific study of human subjectivity. Q-methodology is used to identify opinions, shared among students, on issues they consider important about the library as place. These opinion types can be used to aid librarians in reaching Net Generation students and in designing better services and better spaces.

Q-Methodology

Q-methodology is a fully developed method for the systematic investigation of human subjectivity.⁶ Subjectivity in this context means simply the communication of a person's own point of view on a topic. As such, this methodology is well suited to developing an exploratory understanding of students' attitudes and beliefs about the library. Typically, a Q study involves three basic procedures. First, a set of opinion statements about a topic of interest are collected. Next, individuals read the statements, react to them, and sort them along a continuum of preference (usually from "agree" to "disagree"). This operation is known as a Q-sort: a subjective ranking of the statements from an individual's own point of view. Lastly, once viewpoints are modeled in Q-sorts, data are analyzed, most often using a statistical technique called factor analysis. Unlike survey research, which is concerned with patterns across variables, Q is interested in patterns across *individuals*. Factors that emerge from the analyzed Q-sorts indicate segments of subjectivity and represent

points of view. Thus people who load highly on a factor reveal a high level of commonality with one another and dissimilarity with people who load highly on other factors. Factor scores are calculated to aid the task of understanding and interpreting the meaning of the factors.⁷

Q-methodology was introduced in 1935 in a letter to *Nature* written by William Stevenson, a British physicist and psychologist.⁸ Today, Q-methodology is widely adopted in the social sciences, most notably in the fields of communication, political science, and health sciences. A Q bibliographic database maintained at Q-Method, a Web site devoted to the practice of Q, has over 2500 entries.⁹ In recent years, the Q technique and its methodology has broadened its appeal and been applied in a number of intellectual fields, including marketing, religion, and women's studies. In the field of academic librarianship, Q-methodology is relatively unknown. The authors are aware of only one study involving Q-methodology, which reports how a Q-sort was used as a technique to prioritize journal titles as candidates for possible cancellation.¹⁰

Methods

In Q, the flow of communicability surrounding a topic is referred to as a "concourse" and it is from this concourse that a sample of statements is drawn for administration of a Q-sort.¹¹ The concourse for this study was obtained by asking students to participate in a free-text exercise. Students were asked to spend a few minutes providing their thoughts, in writing, about the library and its services. They were encouraged to express themselves through opinion statements. An initial sample of 140 statements was selected from the free-text exercise. From the 140 statement, forty-two were chosen that express an array of opinions on the library as place. This selection was based on unstructured sampling, a process where items presumed to be relevant to the topic are chosen. This approach provides a reasonably accurate survey of positions taken on the subject. The researchers are confident that the final statement sample is comprehensive in scope and balanced in content.

Q-methodology is an intensive form of analysis and involves small numbers of subjects. As such, it makes no claims about being statistically representative of some larger population—that's not the purpose of Q. Since Q has confidence in its individual observations, we expect that small

groups of subjects reflect the structures existing in some larger population of subjects. Because our unit of analysis is a point of view about some topic, as opposed to individuals, adding more individuals to the study will at some point not yield any new information unless the extra individuals are truly different. That is, they express a different point of view. If we suspect that other perspectives exist, we could simply cast the person-sample "net" a little wider. Nothing precludes adding more subjects to the study. Q lets us say with confidence, then, that there exist a number of perspectives on the library as place. It does not, however, tell us what proportion of the larger population (undergraduates at Miami) subscribes to the point of view in question. That question could be answered with a traditional, large-n sample survey.¹²

The intent of this research was to draw a sample that represents a cross-section of undergraduates at Miami University. To this end, efforts were made to sample students based on gender, status, and academic division of primary major. In spring 2006, the researchers contacted undergraduates at the University's student center, asking them to participate in the Q study. The solicitation included a letter describing the study and asking the student to participate, a consent form to be signed and returned, and a deck of forty-two statements about the library. Also included was a step-by-step guide for how to sort the statements (known as a 'condition of instruction') and a score sheet to record the order of the statements.

Fifteen students sorted the forty-two statements according to their degree of agreement or disagreement into a forced distribution grid that resembles a normal bell-shaped curve. They also completed a short questionnaire on library use and demographic information.

Using PQMethod, a statistical program tailored to the requirements of Q studies, each Q-sort was intercorrelated with the others and a 15x15 correlation matrix was factor analyzed using the Principal Component method.¹³ Four unrotated factors were extracted and rotated using a varimax rotation. Factor scores were then computed for all four factors to reveal clusters of opinion. In this context, a Q-factor represents a group of undergraduates at Miami University who share similar attitudes, opinions, and beliefs about the library. The four factor solution was determined to be adequate given that thirteen of the fifteen Q-sorts loaded significantly on only one factor. A

factor loading is a measure of how saturated a subject is on a given factor.¹⁴ While we can make no claim that the four factors brought to light here are exhaustive of all possible points of view, they do represent four distinctive ways of thinking that exist among Miami University undergraduates.

To aid in the interpretative process, an idealized Q-sort was computed for each factor that represents

how a hypothetical individual loading 100% on a factor would order the forty-two statements. Table 1 reports the scores of all forty-two statements in the idealized Q-sort for each of the four factors or viewpoints (1, 2, 3, and 4). This table reveals in a general way how Miami University undergraduates of this viewpoint think about the library.

Table 1: Statement Scores for Each Factor

		Factors			
		1	2	3	4
1	The library should try to carry more contemporary literature, movies, and periodicals that students would desire.	1	0	4	-1
2	Most of the time I use the library to study and on occasion I perform different odd-jobs required by class.	3	-1	0	3
3	One thing that I like about the library has actually nothing to do with the library—it's the fact that I see many of my friends there.	-5	-4	-4	-2
4	I enjoy having it be quiet, but I also like it as a gathering area with more talking where you can take a break and socialize.	-2	5	-1	2
5	The library is nice for people like me who get easily distracted working at home in front of the TV, computer, etc.	5	-3	-3	-1
6	Some of the books are extremely old and outdated—newer ones would be nice.	-1	-3	0	0
7	There needs to be more locations for students to get help. I can recall times when I had questions, but could not find anyone to answer them.	-2	-4	-2	-4
8	The library needs more individual and group study areas.	-1	0	1	1
9	I really like being at the library. I work well at the library and I can get a lot done there.	5	-1	-1	3
10	The people at the reference desk and librarians are very helpful.	1	4	2	-2
11	It costs too much to print.	-3	5	1	-2
12	I appreciate having a quiet place to comfortably study.	4	1	3	1
13	It takes way too much time and work to get a study room.	-1	-1	5	-5
14	I often can't find what I need.	-4	-5	-2	-3
15	The library is a social haven—the environment is great.	-3	2	-4	-3
16	It is nice to know you can go to the library and be pretty sure that what you are looking for is there.	3	1	-5	2
17	The library has turned into a place to meet teams, work in groups, and study individually more than a place to do research or checkout books.	1	0	3	5
18	I like the fact that the Libraries' computer lab has almost every available program that I would use in class.	2	1	-1	-1
19	Some library employees are absolutely wonderful while others are pretty careless as to whether or not they provide you with any service or help.	-3	-4	4	-1
20	There should be a good mix of quiet tables and tables for group meetings.	3	2	0	4

Table 1: Statement Scores for Each Factor (continued)

		Factors			
		1	2	3	4
21	I enjoy meeting at the library for study groups and other group projects.	0	1	-2	3
22	I am always very impressed with the information, books, and resources I find when searching at the library.	0	1	0	1
23	I wish the library had more group meeting rooms/places for groups to meet. I find that once the semester gets started it is hard to find a place to go.	-3	0	2	3
24	I like the availability of computers that are both Mac and PC because that way I am able to learn to use both platforms.	0	-2	3	-4
25	Employees need to be more helpful and knowledgeable. I feel like I put them out of their way when I ask for help and they sometimes say they don't know because they are being lazy and don't want to help.	-2	-5	-5	-4
26	The library is a wonderful place to access materials that are very difficult to find online.	2	-2	1	0
27	I don't really use many of the books at the library. Most resources for research can be found online.	0	4	-3	2
28	The study rooms are very important to students but they shouldn't be all that the library is used for.	2	-2	2	-3
29	The library needs more outlets for laptops.	-2	-1	-3	2
30	I use the library more for group projects than for individual studying.	-4	-2	-2	0
31	I really find it helpful that the library has extended its hours making it more convenient for students.	4	4	5	1
32	I think most students are unaware of the resources available at the library because they have never been told or are uninterested in learning.	-1	3	4	4
33	I value a good section of pleasure-reading.	1	0	1	-5
34	The services and sanctuary I find at the library are wonderful. I am able to concentrate and focus in the library more than any place on campus.	4	-3	-4	0
35	The library is very intimidating and I think more people would use it if they knew exactly where to find things.	-5	-1	0	1
36	I like lounge areas for more casual reading.	1	2	-1	-3
37	I enjoy being able to use wireless Internet access.	2	3	2	0
38	More computers and laptops are needed at the library.	0	-3	3	5
39	I believe that the Internet replaces the library as a place for research, but that the library can be effective as a place for study.	-4	3	-1	4
40	It is nice to be able to have a little snack or drink while spending hours in the library.	3	3	1	-1
41	Overall, I have been very impressed with the effort made by library employees to be helpful and caring about my learning.	0	2	0	0
42	My favorite thing about the library is its computer lab which is loaded with new machines every year.	-1	0	-3	-2

Observations

The factor analysis of the fifteen undergraduate students revealed four factors or viewpoints: Traditional (Viewpoint 1), Multitasking (Viewpoint 2), Public Library (Viewpoint 3), and Group Work (Viewpoint 4). Labels are attached to the factors to enhance understanding of each group's point-of-view toward the library. Each factor represents a group of undergraduates who think similarly about the library as place. In interpreting the four factors and their respective points-of-view, it is important to understand that this examination is not done simply by pulling out statements with extreme scores on each factor. Investigators need to take into account how the statements are placed in relation to one another in each factor and the comparative placement of statements in different factors.

Viewpoint 1: Traditional

Students of this type are interested in the library as a place of sanctuary and use it for individual study. They feel very comfortable in the library and appreciate extended operating hours and the ability to eat and drink while using the library. Although there is some appreciation for the technology available at the library, it is not an important aspect to them.

Viewpoint 2: Multitasking

Students of this type tend to take advantage of and expect the full-range of resources that the library has to offer. It is not one particular service or function that most attracts them, but rather all of them consolidated in one place with convenient access. They are generally self-sufficient library users, picking and choosing those aspects that best suit their needs at a particular moment. They prefer the Internet to do research, but appreciate that help is there when they need it.

Viewpoint 3: Public Library

The public library type values convenience as a top priority. These students want fast and easily available services and access. The public library user may find the academic library and its complexity frustrating.

Viewpoint 4: Group Work

This type of student sees the library as primarily a place to meet and study in groups. Technology is important to this group only as such that it facilitates group meetings. This group does not value the library for either its research resources or other services that are not directly related to group work.

Lessons Learned

Throughout the year-long process that Q has been used at Miami University Libraries, we have learned many lessons that have helped us in each stage of the research. Although Q is not overly complex, like any research project, multiple steps are involved and we continually looked for ways to make improvements. In this learning process, we were fortunate to have the time to run a pilot study and then receive funding to conduct a second phase (currently ongoing).

By far the most important lessons were learned in the pilot phase where we tested procedures and our research design. Although the pilot was successful as a study that brought us meaningful and useful results, we saw that there were procedures that we would want to change if funding was procured to conduct another phase of the study.

Below are a few of the lessons we learned as we progressed through the research process.

Recruitment of participants

One of the first challenges we faced was how to recruit volunteers to participate in our study without offering compensation. We used our contacts in the libraries to find volunteers that were library student workers and students in classes taught by librarians. The results were disappointing in two ways: 1) very few students volunteered and 2) the volunteers did not represent a diverse selection of Miami University's student body. In an effort to remedy this problem, we bought, with our own funds, twenty \$5 Starbucks gift cards. Our volunteer recruitment method was to go to the student union, approach students, and ask if they were interested in participating in our study. There were plenty of takers, but the students were often distracted and hurried, and some of the data reflected this. Most students were in groups and were eating when we approached them.

With funding from the grant, we bought \$20 gift cards, made advertisements and received more responses than we needed. The interviews yielded richer data and the students seemed willing to "work" for the gift card by answering questions and filling out the Q-sort to the best of their abilities. It was also a benefit that the students came to the library where we used a study room free of distractions. Because we received responses from more students than we needed, we were able to select students that better reflected a larger

demographic range of the student body.

Collecting Quality Data

Ask a student how they feel about the library and you will most likely get an honest response, but the conversation will be over in less than one minute. In looking for ways to have students talk more about their opinions, likes and dislikes, and uses of the library, we found it helpful for students to do a freewrite at the beginning of an interview session. The freewrite was a way for the students to begin to formulate their thoughts and opinions about the library. After the freewrite, we started the interview by asking them to tell us about what they wrote. This provided an easy way for students to begin talking, and invariably the students greatly expanded upon their freewrite.

Misunderstanding of Q

Q is not a very well known research methodology, and, as a hybrid methodology incorporating both qualitative and quantitative components, it is prone to misunderstanding. Generally, this would not be a concern if given the chance to explain the methodology and answer questions. But we found that at least in one instance, the comments from a grant application, that we did not receive, showed that the reviewer clearly did not understand Q. We have learned that a good explanation of Q-methodology and its requirements is very helpful when applying for grants and submitting the research for presentation and/or publication.

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Endnotes

1. Neil Howe and William Strauss, *Millennials Rising: The Next Great Generation* (New York: Vintage Books, 2000).
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3. Andrew Richard Albanese, "Deserted No More," *Library Journal* 128, no. 7 (April 2003): 34; Scott Carlson, "The Deserted Library," *Chronicle of Higher Education* 48, no. 12 (November 2001): A35; and Charles Martell, "The Ubiquitous User: A Reexamination of Carlson's Deserted Library," *portal: Libraries & the Academy* 5, no. 4 (October 2005): 441-453.
4. Denise Troll, *Usage and Usability Assessment: Library Practices and Concerns* (Washington, DC: Council on Library and Information Resources, 2002).
5. See <http://www.libqual.org/>
6. For a good introduction to Q-methodology see Steven R. Brown, "A Primer on Q Methodology," *Operant Subjectivity* 16 (1993): 91-138.
7. Bruce McKeown and Dan Thomas, *Q Methodology* (Newbury Park, CA: Sage Publications, 1988).
8. William Stephenson, "Technique of Factor Analysis," *Nature* 136 (1935): 297.
9. See <http://www.qmethd.org/>
10. Margaret Jorgensen Dick and Marla Edelman, "Consequences of the Budget Crunch: Using Q-Methodology to Prioritize Subscription Cancellations," *Journal of Nursing Education* 32 (April 1993): 181-182.
11. Steven R. Brown, "Q Technique and Method: Principles and Procedures," in *New Tools for Social Scientists*, eds. William Berry and Michael Lewis-Beck (Beverly Hills, CA: Sage Publications, 1986).
12. PQMethod is written by Peter Schmolck and can be downloaded for free at <http://www.rz.unibw-muenchen.de/~p41bsmk/qmethod/>. The Web site also includes a complete instruction manual and links to other software programs that are specifically designed for Q studies.
13. The standard error for factor loading is given by the expression $SE = 1/\sqrt{n}$, where n = the number of statements; for $n = 42$ statements, $SE = 1/\sqrt{42} = .15$. Loading in excess of 2.58 (SE) = $\pm .39$ are significant at the .01 level.

[illegible]

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Appendix B: Sorting Instructions

The objective here is to sort the statements along the continuum from the ones that you most disagree with to the ones that you most agree with.

1. Look at all the statements to familiarize your self with the range of issues.
2. Sort the issues into 2 piles. One should contain the statements that you *agree* with -- for any reason. The other pile contains those statements that you do *not agree* with -- for any reason. The piles do not have to contain equal number of statements.
3. From the pile of statements you agree with, select the two items (only two) that you **Most Agree** with. Place them in a two-item column at the extreme right of your workspace.
4. From the remaining *Agree* pile, select three statements that are now more *agreeable* to you than the others in the pile. Place these three statements in another column just to the left of the two already selected in step 3 above.
5. Next, select from the remaining *Agree* pile the four statements that you now *Agree* with the most. Place these four statements in another column just to the left of the three already selected in step 4 above.
6. Next, select from the remaining *Agree* pile the four statements that you now *Agree* with the most. Place these four statements in another column just to the left of the four already selected in step 5 above.
7. Next, select from the remaining *Agree* pile the five statements that you now *Agree* with the most. Place these five statements in another column just to the left of the four already selected in step 6 above.
8. Next, select from the remainder of the *Agree* pile the six statements that you *Agree* with the most. Place these six statements in another column just to the left of the five already selected in step 7 above. If you have run out of statements in the *Agree* pile and cannot finish step 8, proceed immediately to the next step. If you have extra unsorted statements at the end of this step, combine the extras with the *Not Agree* pile and go on to the next step.
9. Now, work with the pile of statements you feel you do *Not Agree* with. Begin by selecting the two statements you find **Most Disagreeable**. Place them in a two-item column on the far-left side of your work area.
10. From the remaining **Most Disagreeable** pile, select three more statements that are now *more disagreeable* to you than the others in the file. Place these three statements in another column just to the right of the two already selected in step 9 above.
11. Next, select from the remaining *Disagree* pile the four statements that you *Disagree* with the most. Place these four statements in another column just to the right of the three already selected in step 10 above.
12. Next, select from the remaining *Disagree* pile the four statements that you *Disagree* with the most. Place these four statements in another column just to the right of the four already selected in step 11 above.
13. Next, select from the remaining *Disagree* pile the five statements that you *Disagree* with the most. Place these five statements in another column just to the right of the four already selected in step 12 above.
14. Place any remaining statements in the middle of your grid.
15. Now, look at your arrangement. Feel free to move issues around to make sure that your opinion is reflected correctly.
16. When everything is sorted as you want it to be, write the statement numbers in the blank boxes in the grid on your answer sheet and answer the remaining questions of the form.

Balanced Scorecard in Public Libraries: A Project Summary¹

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Abstract

The goal of this project was to assess the utility of a Library Scorecard that could be used to communicate the value of the public library using a variety of performance measures. A workbook, "Scorecards for Results: A Guide for Developing a Library Balanced Scorecard," was developed as part of a Federal grant from the Institute of Museum and Library Services (IMLS). The workbook was tested by more than thirty public libraries across the United States. A survey of stakeholders was used to assess the utility of this management assessment tool.

Introduction

Historically, the majority of public libraries collect a plethora of performance measures and statistical information. Some of these measures are reported to the library's stakeholders, some are used to complete annual surveys required by the state library or ad hoc surveys, and sadly, many are gathered but then ignored.

The objective of the Library Balanced Scorecard project is to assist the public library in determining what performance measures and metrics are important within a broader context of strategic planning and management. These important measures should focus on what defines the success of a specific library and show the difference it makes in the lives of customers. A Library Balanced Scorecard provides a framework for assessing the library's performance and communicating the value of the public library to its community and

interested stakeholders.

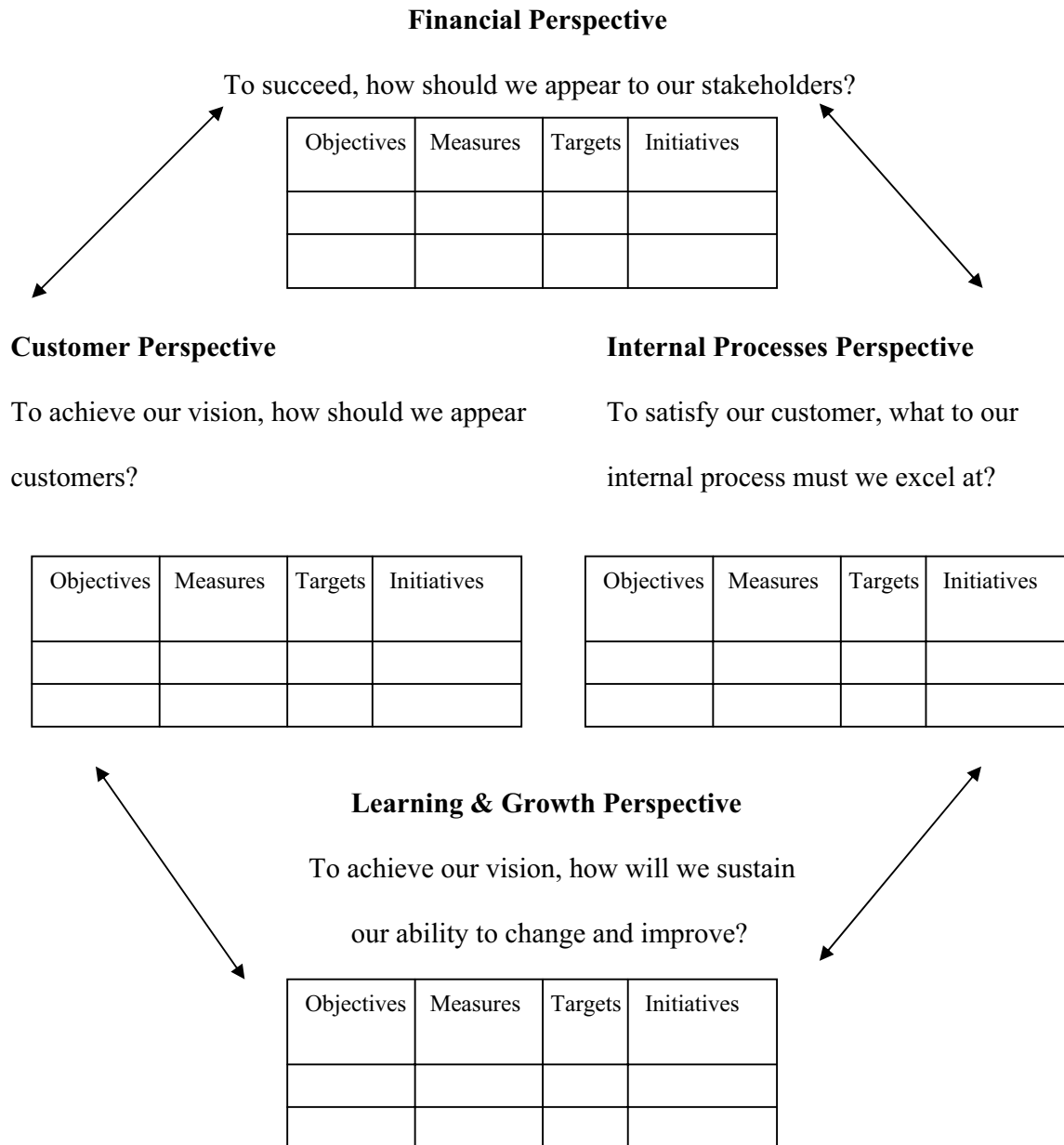
The scorecard approach is well suited to complement the planning process detailed in *Planning for Results*.² Nevertheless, it is not a requirement that a library complete *Planning for Results* prior to embarking on the process to develop its own scorecard.

Origins of the Balanced Scorecard

Robert Kaplan, a Harvard accounting professor, and David Norton, a consultant, collaborated on a project to develop a set of performance measures that would complement the heavily weighted financial measures found in almost all company annual reports.³ Financial measures by their very nature are backward-looking or lagging measures and reflect results of the prior month, previous quarter, or past year. The result of this project was development of the Balanced Scorecard.

The performance measures selected for the Balanced Scorecard should reflect the vision and strategies of the organization and include four perspectives: financial, customer, internal business processes, and innovation and learning (sometimes called organizational readiness, learning and growth or potentials). Within each perspective, three to five measures are chosen to reflect the strategic goals and vision of the organization. The Balanced Scorecard is shown in graphic form in Figure 1.⁴ Originally developed to fit the needs of for-profit companies, the Balanced Scorecard has been successfully adapted by many governments and nonprofit organizations.

FIGURE 1
The Balanced Scorecard

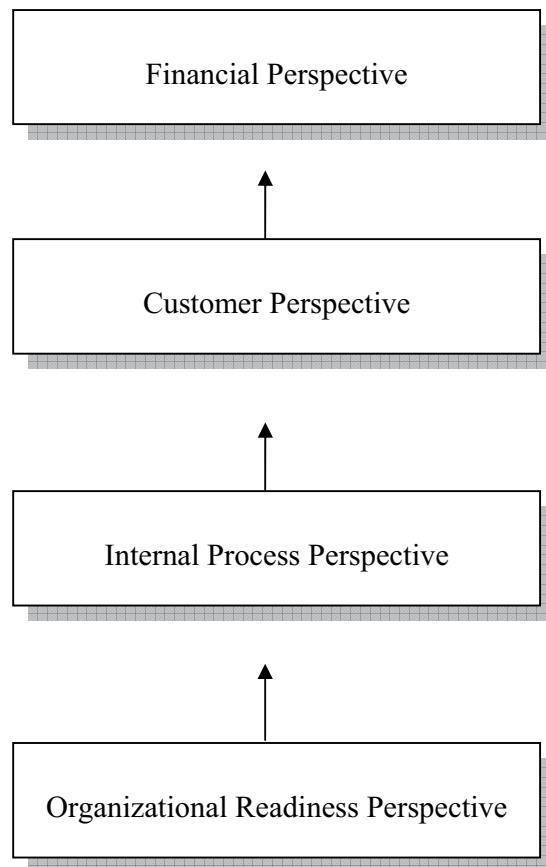


As shown in Figure 2, the Balanced Scorecard is “read” from the bottom to the top. In effect, the scorecard requires the organization to create a cause-and-effect relationship between the perspectives. For example, if a company invests in additional training for its staff and provides the necessary information-technology (IT) infrastructure (the Organizational Readiness Perspective), then the staff members will be better

able to develop improvements in procedures and processes (the Internal Processes Perspective) and thus work more productively. The staff will also be better able to respond to customer needs and requests that will lead to more satisfied customers (the Customer Perspective), which in turn will lead to higher revenues and better profits (the Financial Perspective).

FIGURE 2

The Balanced Scorecard



The four perspectives are designed to balance:

- Leading and lagging performance measures
- The financial and non-financial
- The internal and external
- Current performance with the future.

Once an organization is able to clearly articulate its strategy, it should create a strategy map, which is a graphic method for showing how its strategy is reflected in each perspective. Performance measures are then selected to reflect the selected strategies, and both short- and long-term targets for each measure are identified. The data for each measure are collected as required (data may be collected by an automated system as the result of each transaction, or sampled periodically). The Balanced Scorecard is typically updated on a quarterly basis.

The Organizational Readiness Perspective

This perspective, sometimes called "Learning and Growth," "Innovation and Learning," or "Potentials," is designed to assess the organization's ability to compete in the future. The organization may assess the skills of its employees in order to determine if the right mix and depth of skills are present to meet the changing competitive environment. IT readiness assessment is designed to ensure that the IT network and software applications meet the needs of the organization today and into the future. The organization may also wish to determine whether its organizational culture will support change and action as reflected in such measures as employee morale and staff turnover rate.

This perspective attempts to answer the following type of questions:

- Are staff members equipped with the right skills to deliver quality services?

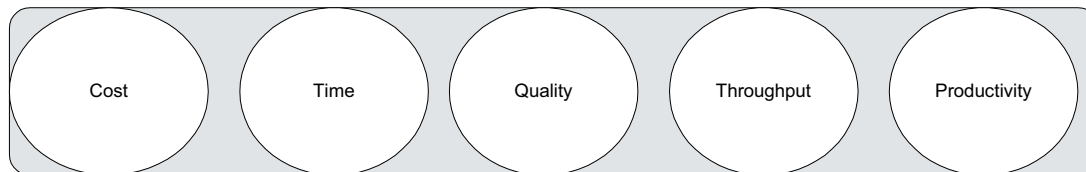
- Are new technologies being tracked so that skills likely needed in the future are being identified?
- Does staff possess the proper tools and training to perform their jobs in an excellent manner?
- Is the organization's IT infrastructure (local-area network, link to the Internet, and application software) adequate to meet the needs of the library today and into the near-term future?
- Are the morale and motivation of library staff members high?
- Does the organization have a culture that is willing to carefully and systematically assess the quality of services currently being delivered?

The Internal Process Perspective

The aim of the Internal Process Perspective is to understand the processes and activities that are critical to enabling the library to satisfy the needs of its customers and the processes that add value in their eyes. In developing its Balanced Scorecard, the library should be identifying and implementing the strategies that allow it to offer distinctive and sustainable competitive advantages.

Costs, quality, throughput, productivity, and time measures are usually included in this perspective (Figure 3). Quality-improvement initiatives attempt to monitor and improve existing library practices and processes by eliminating non-value added work (unnecessary from the customer's viewpoint or work that is duplicated) and streamlining workflows. In developing its own scorecard, the library may identify new services, and hence processes, at which it must excel in order to meet customer expectations and changing conditions of the marketplace.

FIGURE 3

Focus for Internal Process Measures

While the library may focus on the continuous improvement of existing internal processes and procedures, it may decide that it needs a radical process reengineering such as advocated by Michael Hammer and James Champy.⁵ The focal point of process reengineering is not efficiency (although efficiency will most likely be improved), but rather effectiveness: what is going to add value for the customer. In a majority of process reengineering projects, tools such as activity modeling, data modeling, statistical quality-control techniques, activity-based costing, and cost-benefit analysis can be used to help achieve breakthrough results.

The Customer Perspective

The heart of a business strategy for any organization is the customer-value proposition that allows the organization to differentiate itself from its competitors. The performance measures or indicators chosen for this perspective show the extent to which the company is serving its potential market (market share) and how well the customers' needs are met by the product or service being delivered (customer-satisfaction measures).

Customers generally evaluate a product or service by considering three discrete categories of benefits: product or service attributes, a relationship, or its own image.

Possible product or service attributes of interest to a customer are:

- **Availability.** Does the organization have the product or service when requested by the customer? For a library, this translates into determining whether the desired item is on the shelf or if the service can be delivered. For a library, an availability study or fill-rate survey

is often used to determine how often the library is able to provide the desired item.

- **Selection.** Some companies compete by providing a wide variety of product or service choices (for example, Nordstrom's in the retail sector) while others offer fewer choices and compete using other service attributes (such as price).
- **Quality.** Some companies compete in the marketplace on the basis of high quality (for example, Mercedes or Lexus in the automobile sector). It is important to note however, that a great many organizations have been spending considerable time and energy in quality-improvement projects so that high quality is now often an assumption made by customers.
- **Functionality.** Some companies find that providing a greater amount of product functionality—e.g., a software application—will differentiate them from their competitors. The challenge for those that wish to compete by using functionality is that the bar is constantly being raised, and what is currently superior functionality becomes the minimum standard in a year or two.
- **Time.** Assuming the customer makes a decision to physically visit the library, the time and energy required to retrieve the desired material or receive a service may be considerable. The customer may also need to wait in a line for assistance or to receive a service. Ultimately, the customer makes a determination about whether the effort involved exceeds the likely value of the information or materials being sought.

The determination of customer value versus effort in a library setting has been formalized as “Moore’s Law,” which states: “An information retrieval system will tend not to be used whenever it is more painful and troublesome for a customer to have information than for him not to have it.”⁶

- **Price.** The customer incurs a cost to fulfill an information need, even if the materials or information service is free, as in a public library. Given the low price of using the tax-supported public library, an important question to ponder is why more citizens are not using the library? While it is obvious that the answer involves a number of factors, competition is clearly one of the more important concerns.

The relationship that exists between the customer and an organization can be manifest in one of two ways:

- **Service.** The service provided by an organization to its customers may be one of the most important differentiating factors in the customer-value proposition. For example, some of the higher-priced four- and five-star hotels maintain an extensive customer profile so that customer preferences are anticipated and provided without any action on the part of the guest. The goal is to develop a level of customer intimacy such that the customer would never consider staying at a hotel with a different name on the marquee. The customers are willing to share more and more information about themselves with the hotel since their stay will be more relaxing and refreshing. Some people in marketing circles call this willingness of customers to divulge increasing amounts of personal information as an “opt-in” personalization service.
- **Partnerships.** An organization may develop a vital and important relationship with one or more of its customers. This relationship is sometimes taken beyond the normal supplier relationship when both organizations can foresee developing a win-win relationship.

And finally, an organization can define its

customer-value proposition using its image or brand name. Some brand names have a lot of value and are quite old (consider Coca-Cola or Pepsi), while other valuable brands have origins that are relatively recent (for example, Google or amazon.com).

Rethinking and modernizing branding can be useful for as library as well. The perception among people in all English-speaking countries of the public library is one of “books” as clearly demonstrated by the recent OCLC survey.⁷ The library district in London’s East End decided to close seven traditional branch public libraries over time and replace them with seven radically new “Idea Stores.” This is being done in an attempt to change the general perception of the library as a quaint, outdated, and obsolete institution to one that is vibrant, relevant, and hip.⁸

The Financial Perspective

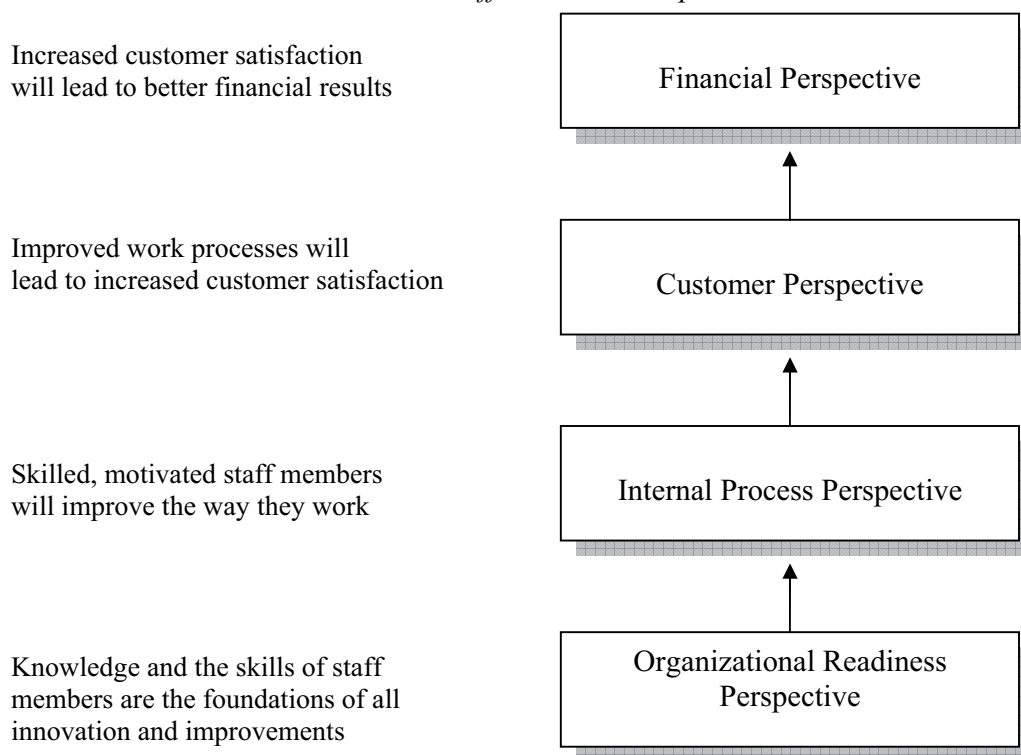
The bottom line for any for-profit company is to choose a set of strategies that deliver long-term shareholder value by increasing the growth of revenues (and profits) as well as increasing its overall productivity—that is, improving its asset utilization. Thus, in a company’s annual report you will see the presentation of information about market share, revenue growth, profitability, and so forth.

A public library can use the financial perspective to assess the amount of local support for the library using a variety of measures such as budget per capita, growth in budget compared to inflation, a share-of-the-budget-pie measure, and so forth.

Integrating the Perspectives

The strength of the Balanced Scorecard is that it allows the organization to focus on identifying the impact of its strategies using each of the perspectives. That is, using a logic model, the organization is able to formulate a cause-and-effect relationship between the perspectives.

For example, consider the normal Balanced Scorecard, as shown in Figure 4. Four broad assumptions about the interrelationships are hypothesized in a general cause-and-effect scorecard.

FIGURE 4*Cause-and-Effect Relationships*

The strength of the scorecard is demonstrated by its balance—showing how well you have been doing (lagging indicators), how well you are doing (current indicators), and can expect to do in the future (leading indicators). Using a Balanced Scorecard will assist an organization in focusing on the factors that create long-term value for its customers.

Research has validated the underlying structure of the scorecard. For example:

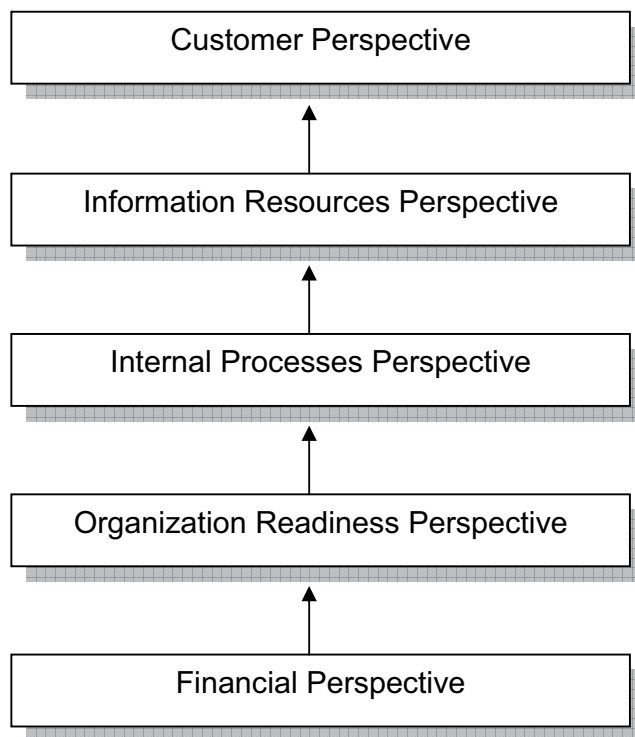
- Increased employee satisfaction leads to higher performance.
- Service quality is correlated significantly with customer satisfaction.
- Rework and waste significantly affect performance.⁹

Library Balanced Scorecard

Nonprofit and government organizations have adjusted the sequence of the perspectives and added one or more perspectives. A general purpose Library Balanced Scorecard is shown in Figure 5. A new perspective called Information Resources is included, since the library's physical collection and provision of access to electronic resources comprise the *raison d'être* of the public library.

FIGURE 5

The Library Balanced Scorecard



After selecting three to four performance measures for each perspective, the library then decides on improvement targets for each measure. In some cases, the library may decide that it will be necessary for staff to participate in improvement projects or initiatives in order to achieve the desired targets.

Other scorecard models have been suggested, but none of these approaches have achieved anywhere near the popularity of the Balanced Scorecard.¹⁰

Experiences in Using the Balanced Scorecard

Due to its flexibility, the Balanced Scorecard has been used quite successfully by a number of small to very large organizations in almost every sector of the economy. The framework of the scorecard provides the necessary structure, but the detail can be tailored to fit the needs of any organization. The results of introducing and using the Balanced

Scorecard can often be quite dramatic and generate very positive results.

The use of a scorecard is not a one-time event but rather must be integrated into the fabric of the organization so that it influences how people perform their jobs on a daily basis.

Organizations are using the scorecard to:

- Clarify, update, and communicate strategy
- Link strategic objectives to performance measures with associated long-term targets
- Broaden managements focus on issues that affect sustainable long-term performance
- Provide a focus for continuous process improvement efforts and quality-enhancement initiatives
- Identify and align strategic initiatives
- Identify critical employee competencies
- Learn about those capabilities critical to realizing strategic intent
- Demonstrate accountability

One of the chief reasons why the Balanced Scorecard has been so successful is that it assists an organization in translating its vision and strategies into concrete actions by people throughout the organization. In short, the selection of the correct performance measures will show how well the organization is doing in terms of implementing its strategy. When used in this way, the scorecard becomes a strategic management tool rather than simply a new format for monitoring performance.

Strategic management is a systems approach to identifying and making the necessary changes and measuring the organization's performance as it moves toward its vision. Rather than merely a collection of performance measures or a wish list for continuous improvement, the scorecard prescribes a plan for strategic execution.

The use of multidimensional perspectives found in a Balanced Scorecard will assist the library's stakeholders in gaining a better understanding of library's performance—*away* from past performance and *toward* what the library seeks to become.

The Balanced Scorecard contributes to the organization's ability to answer two very fundamental questions:

- What do we want to achieve and what must we do to achieve it?
- Are we doing what we set out to do?

Organizations that have successfully adopted the scorecard concept have found that:

- It is important to recognize that developing and implementing a scorecard is an ongoing and iterative process and not a one-shot project, and
- The scorecard becomes the principal focus for management meetings, and the scorecard perspectives are often used as a means of focusing the agenda of meetings.

The Library Balanced Scorecard Project

The Library Balanced Scorecard project has two phases:

- Phase One activities involved working with the four project libraries to develop their own Library Balanced Scorecard. In addition, a workbook detailing the process that any public library may follow to develop its own scorecard has been prepared and can be downloaded from the project's Web site at www.ci.carlsbad.ca.us/imls.

- Phase Two involves a number of large and small public libraries from across the United States testing the workbook by developing their own Library Balanced Scorecard. This phase began in September 2005, and each participating library developed their scorecards. In the summer of 2006, a survey was distributed to the stakeholders of these libraries to determine their assessment of the value and utility of Library Balanced Scorecard.

Libraries interested in participating in or learning more about Library Balanced Scorecard are encouraged to visit the project Web site or send an e-mail to the project consultant, Joe Matthews (Joe@JoeMatthews.Org).

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Additional Resources

For additional information about scorecards, see: Kaplan, Robert S., and David P. Norton. 2004.

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2. Ethel Himmel and William James Wilson, *Planning for Results: A Public Library Transformation Process* (Chicago: ALA, 1998). See also, Sandra Nelson, *The New Planning for Results: A Streamlined Process* (Chicago: ALA, 2001).
3. The Balanced Scorecard was first introduced in a *Harvard Business Review* article that appeared in January 1992. A whole series of articles by Kaplan and Norton followed over the succeeding years further expanding and explaining the scorecard concepts.
4. Robert S. Kaplan and David P. Norton, "Using

The People Side of Planning and Implementing a Large Scale Balanced Scorecard Initiative

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Abstract

What organizational infrastructure is needed to plan and implement the balanced scorecard? What leadership, training, staff support, and work processes can we use to create and sustain a balanced scorecard that is large scale and designed to serve as the organization's strategic plan? Using VCU Libraries experience in planning and implementing the balanced scorecard as strategic plan, the paper describes the "people side" of the process at VCU where the goal was to use a streamlined, efficient process. VCU's BSC (a two year plan) is online at: <http://www.library.vcu.edu/strategicplan/index.html>.

I. Surveillance

In 2004, the VCU Libraries began the search for a strategic planning methodology that would match the assessment-intensive environment of the Libraries and the University.

The search was initiated by the University Librarian, John Ulmschneider, asking the members of the Administrative Council (AULs) and the Planning & Assessment Librarian to take a look at the balanced scorecard (BSC). Our investigation led naturally to the Web sites of the University of Virginia Libraries¹ and the University of Florida Libraries² and to a few other sites that had ventured into use of the Balanced Scorecard in academic libraries. We found the UVA site especially hospitable to BSC newcomers. Here were lucid explanations of perspectives, measures and targets. Here were metrics that were elegant and easy to love. The University of Florida Libraries site was inspiring as well. Here were Balanced Scorecards

decked out as a strategic plan. Here was a model, the famous BSC grid, with strategic initiatives at the head of each card, that could be adapted by us. But how would we do it? And why should we do it? In summer 2004, the Planning & Assessment Librarian was asked to develop a plan for introducing the balanced scorecard to the VCU Libraries. This is the preplan or "plan the plan" piece of planning that is so essential to a multi-year process that will require heavy use of human resources. The preplan would be shared at a meeting with the Management Council, a group of approximately twenty members, most of whom were department or unit heads, and including the members of the Administrative Council. With guidance from the University Librarian, the Planning & Assessment Librarian prepared a document for the meeting with the Management Council that included:

1. Background materials on the BSC including links³
2. A proposed approach (that we adopt the University of Florida model) with examples from their strategic plan
3. Recommendation to use VCU Libraries Mission-Vision-Values statement as the basis for the top level strategies we would develop
4. Definition of metrics
5. Proposed process (see Attachment A below, "VCU Libraries Strategic Planning Process" 10-06-04)
6. Action plan
7. An effort to link the proposed BSC plan to ongoing assessment tracking at the University level
8. Timeline (See Figure 1)

Figure 1: VCU Libraries Strategic Planning Process

(Attachment) VCU Libraries Strategic Planning Process

1. Understand components of the Strategic Plan:
 - Strategies (derived from the Vision statement)
 - Objectives (specific goals developed from issues)
 - Perspectives (the BSC framework for organizing objectives)
 - Measures, Targets, & Specific Plans (how success in achieving each objective is measured, and how objectives are actually accomplished)
2. Choose Top 10 **issues** from which to generate objectives in the Strategic Plan.
3. Translate each issue into an objective.
4. Organize objectives and their associated measures, targets, and plans within the framework of Balanced Scorecard (BSC) approach.

Strategy (corresponds to one of the statements in the Vision statement)

May have 3 or 4 **objectives**.

Each objective is assigned to 1 of the 4 **BSC Perspectives**

1. **User Perspective**
2. **Financial Perspective**
3. **Internal Process Perspective**
4. **Learning/Growth Perspective**

Each objective has associated measures, targets, and plans.

5. Relationship of Strategic Plan to Other Plans:
 - The VCUL Operations Plan (think of this as a tactical plan) includes all objectives for the FY, including all the BSC objectives. The BSC objectives are showcased and presented in the framework of a Strategic Plan for accountability to constituents, and focus on the top 10 issues important to our users.
 - Workplans for faculty and staff should include, as appropriate, plans to accomplish specific task to achieve the objectives of the Strategic Plan.

II. Learning

In fall 2004, the Planning & Assessment Librarian assisted the University Librarian in preparing the VCU Libraries Management Council (approximately twenty members) for use of the balanced scorecard approach. This was the education and discussion phase of the process. Internal Web pages facilitated sharing of links and a few key articles on the BSC. Although we chose the University of Florida model for organizing our content, we found extremely useful background material and reporting frameworks on the UVA

Web pages. Managers were asked to inform their staff about the BSC learning process as they investigated this new-for-us approach to planning and assessment.

III. Getting Our Act Together

Early in our process, we felt it was important to answer a key question for all stakeholders, including library staff: "What was our understanding of the Balanced Scorecard approach and why did we choose it as a model for our strategic plan?"

We defined the Balanced Scorecard as a management technique designed to provide a view of an organization from four perspectives: user, internal processes, innovation/learning potential, and financial. Beginning with the identification of the VCU Libraries' most important goals, we would define measures and specific targets to show what we are trying to accomplish. The measures (metrics) and the methods of obtaining the measures would be described and tracked on our scorecards.

Our primary goal in developing balanced scorecards is to provide the VCU community (including ourselves) with an unprecedented level of detail and accountability of the VCU Libraries' strategic objectives for FY 2006 and 2007 and their achievement.

The plan was developed to be shared with the VCU community from its earliest stages. Even before measures and targets were refined, we put the plan up on our public Web site and invited comments and questions. Progress reports were made to library staff as well as groups in the VCU community (See public Web page "VCU Libraries

Strategic Plan 2005-07" at www.library.vcu.edu/strategicplan/index.html).

It is important to note that the finished plan (six scorecards with forty-three specific objectives) is a hybrid species of balanced scorecard—our goal was not to produce metrics worthy of the balanced scorecard hall of fame. Above all, we adapted the approach to serve our needs and were unencumbered by the need to fill in every square of the BSC grid just to get the job done. Maintaining momentum as well as not wearing people down in the process, has been a high priority throughout the process.

IV. The Draft (People)

In December 2004, a small (seven member) Work Group, including the University Librarian, John Ulmschneider, was appointed by the Administrative Council to draft the plan. The Working Group was charged with developing the balanced scorecard as a two-year Strategic Plan to cover 2005-2007. Note that the first year of the plan was already in progress!

Figure 2: Members of the Strategic Planning Work Group

Elizabeth Burton	Manager, JBC Circulation & Information Services
Karen Cary	Head, Collection Management
Jodi Koste	Archivist and Head, TML Resources & Operations
Susanna Pathak	Planning & Assessment Librarian
Mary Ellen Spencer	Head, JBC Research & Reference Services
Jill Stover	Undergraduate Services Librarian
John Ulmschneider	University Librarian

This group offered a tremendous blend of expertise. While some of the Work Group members may have been uncertain about the planning adventure that lay ahead, the University Librarian felt that he had assembled a hardworking group of colleagues who would be successful.

V. The Draft(s) (Writing the Plan)

For eight months from January to October 2005, the Work Group met two or three times a month to articulate strategic initiatives and draft the plan. The meetings were largely working meetings. Participation by the University Librarian as a

member of the Work Group ensured that the planning was not delayed waiting to hear from library administration about issues and decisions needing clarification. Staying on course in the process is essential to the effectiveness of the Work Group.

The Work Group consulted with library faculty and staff throughout the process of drafting the plan. Its documents and drafts were available on internal Web pages created by the Planning and Assessment Librarian. A key principle guiding our work was that user concerns would be at the core of our plan. We proceeded with each Work Group

member developing a list of top ten concerns of the VCU community. Several members consulted their departments and other library staff to create their top ten list. The Planning & Assessment Librarian used results from the 2004 LibQUAL+® Survey to develop one of the top ten lists. The lists of user

concerns were then synthesized by the Work Group into a document of library user concerns. (See Figure 3.) This list was shared widely with library staff in an effort to make sure that the most strategic issues would be addressed in the strategic plan.

Figure 3: VCU Libraries Strategic Planning: Strategic Issues: Synthesis (5/24/05)

- Increased visibility on campus; PR; marketing/communication – “tell the story; show the value”
- Increase quality of service and user support; investment in staff; eliminate the “poverty mentality” – change service culture; security
- Sustain and expand library spaces; adaptive models for spaces; focus on physical plant aspect; seek partnerships on campus – building cleanliness and care; interim solutions and long term planning
- Build and manage collections
 - Find out what we need to buy and how much we need to buy it
 - Promote use of collections (related to staffing, training, education of users), staff training, “how to use”, training the trainers
 - Increased use of ILL, document delivery
 - Communication with faculty; “regular conversations” about resources
 - Tools to profile collections; analysis
- Accelerate funding growth
 - “Fund the university’s future”
 - establish funding levels for collections and personnel -> long term
 - administrative efficiencies
- Establish the VCUL as partners in the educational and research enterprise
 - Educate our users about scholarly communication issues, copyright
 - Alternatives for publishing
 - Consumer health education
 - Undergraduate education
- Digital content development
 - Develop institutional repository (ETDs, VCU intellectual content, special collections)
 - *policies, content, infrastructure
- Private support/development
 - Capital giving, major gifts
 - Cultural programming
 - Sustained/annual giving
 - Entrepreneurial efforts (grants, Java 901)
- Investment in staff
 - Diversity
 - Training and development
 - Analysis of current positions
 - Recruitment
 - Retention
 - Job satisfaction
 - Support for innovation/creativity
 - Creation of new positions

Next, strategic themes were developed from the Work Group's synthesized List of User Concerns with the supporting language from the VCU

Libraries Mission/Vision/Values statement as an organizing framework.

Figure 4: Strategic Objectives and Mission-Vision-Values Foundations

1. User Centered Services Objective: Provide patrons with exemplary and consistent service in all aspects of library operations.

MVV: The VCU Libraries promotes the success of our students; invigorates research and scholarship; advances the health care and outreach missions of the university with exemplary collections, services, spaces, and staff; opens doors to learning and discovery.

2. Research Objective: Invigorate research and scholarship across all disciplines.

MVV: The VCU Libraries promotes the success of our students; invigorates research and scholarship; advances the health care and outreach missions of the university with exemplary collections, services, spaces, and staff; opens doors to learning and discovery; serve as stewards of the University's information resources and contribute to the world's repository of knowledge.

3. Education and Advocacy Objective: Promote success through education and advocacy.

MVV: The VCU Libraries promotes the success of our students; invigorates research and scholarship; advances the health care and outreach mission of the University.

4. Physical Environment Objective: Create safe, clean, inviting space that fosters learning, research, knowledge sharing, and other academic pursuits.

MVV: Our welcoming environment inspires scholarship, creativity, and the exchange of ideas. Exemplary spaces.

5. Development and Financial Objective: Strengthen financial resources of VCU Libraries.

MVV: We dedicate our expertise to building the best libraries for the VCU of today and are committed to growing in partnership with the VCU of tomorrow; we affirm that a great university is built upon a great library.

6. Staffing/Staff Objective: Recruit, retain, and develop faculty and staff of the highest caliber.

MVV: We anticipate the needs of our community and work to exceed its expectations; we dedicate our expertise to building the best libraries for the VCU of today and are committed to growing in partnership with the VCU of tomorrow. Exemplary staff.

Next, Specific Objectives were developed along with Measures, Targets and Plans for achieving each specific objective. Figure 5 presents a list of the

Work Groups task from kickoff to completing the draft plan.

Figure 5: Strategic Planning Work Group: Task List & Timeline

Kickoff and Orientation to Strategic Planning and Balanced Scorecard (Completed 1/7/05)

Develop plan for input from users on Top 10 issues (LibQual 2004 results will be used, primarily the Gap Scores Analysis and the "Comments" analysis)

Develop plan for staff input on Top 10 issues (1/13/05) completed [See lists under "Documents"]

Develop Top 10 Issues for Users (1/13/05) completed 5/24/05

Review MVV and develop Strategic Themes (1/13/05, completed in May 2005)

Articulate Top Level BSC Objectives (completed May & June 2005)

Develop Draft Plan on the BSC Grid and organize specific objectives (June & July 2005)

Review specific objectives in Draft Plan (focusing on the question of “how strategic is it?”) and prioritize (July 2005)

Develop plan and define measures for specific objectives [done in subgroups of 2-3 members, consulting staff as needed] (July & August 2005)

Set targets for each measure (August 2005)

Gather feedback on Draft BSC Plan (September – October 2005)

Refine Draft BSC Plan and Assign Responsibility for Completing Specific Objectives (October - November 2005)

[Source: Susanna Pathak, Planning & Assessment Librarian, VCU Libraries internal staff Web page for Strategic Planning Work Group]

The Balanced Scorecard Institute Web site has guides on Performance Measures and Metrics that we found very helpful as we developed our metrics (See <http://www.balancedscorecard.org/metrics/index.html>). Choosing measures that matter is by far the most difficult part of defining metrics. In drafting the plan and filling in the grid, we often found it necessary to add notes to “identify better measures” when the plan was reviewed further

along in the process.

VI. Show and Ask

The fully drafted plan, developed in nine months, involved the creation of six Scorecards, with each scorecard corresponding to what would be a top level strategic initiative in a more traditional strategic plan. Each scorecard has specific objectives grouped under the four BSC perspectives:

customer, internal processes, innovation & learning, and financial.

Figure 6: User Centered Services Scorecard

1. User Centered Services Scorecard					
Provide patrons with exemplary and consistent service in all aspects of library operations.					
MVV: The VCU Libraries promotes the success of our students; invigorates research and scholarship; advances the health care and outreach missions of the university with exemplary collections, services, spaces, and staff; opens doors to learning and discovery.					
ID	Objective	Measure	Target	Plan	Notes
User Perspective					
U1	Improve users' service experience	"Service experience" section of LibQual, departmental surveys, focus groups, VLAC, CLUAC, Suggestion Blog	Improve LibQual gap scores for AS-1-9; Establish benchmarks with other survey tools; Decrease in repeat complaints to the Suggestion Blog	Identify service standards; Train and educate service desk staff	
U2	Easy access to resources not available at the VCU Libraries	ILL fill rate and turnaround time; VCUL benchmark data; LibQual gap scores for IC-11	Positive gap score for LibQual IC-11; Improved ILL fill rate; Improved ILL turnaround time	Investigate user resistance to ILL services; Increase visibility of ILL; Increase ease of use of ILL services; Investigate and model peers	
Internal Processes Perspective					
P1	Respond quickly to users service and instructional needs	Self- or departmental-assessment; Decrease time to ramp up new services or programs	Streamlined proposal approval and budgeting processes; Allocation of funding for "project pool"	Clarify proposal reporting processes; determine funding sources	
P2	Develop pervasive culture of service excellence	LibQual "service experience" scores; "Mystery shopper" scores	LibQual "service experience" scores equal to mean of all scores nationally; Strong "mystery shopper" scores	Implement program for service improvement which will have many elements; Identify benchmarks	Investigate value of alternative survey instruments, such as Inquisitive Survey
Innovation and Learning Perspective					
L1	Strengthen employees' ability to answer questions	LibQual question AS-5, survey results; % of staff trained; Conferences, workshops attended	Improve LibQual gap scores for AS-5	Develop program of orientation, training and continuing education	Investigate ways to empower employees to be responsive to users' needs while still applying regulations/procedures responsibly
Financial Perspective					
F1	Develop most effective model for staff funding to support	Allocation of staff funding for user services benchmarked	Allocation of funding for user services as a portion of overall	Review staffing models against staffing at research	Are there other measures that would more directly indicate

The VCU Libraries plan has forty-three specific objectives and many of the specific objectives have two or three measures. It is surely, as BSCs go, a big plan and it is our only plan. We no longer have an annual operations plan nor do we produce a year end report on completing the items in the operations plan. The new focus is on how well we accomplished our goals rather than simply reporting that we accomplished them. We no longer have multi-year strategic plan that is slightly out of step with what we are really doing, the type of plan that doesn't really describe the many strategic things that we do.

Library staff were updated throughout the period the plan was being drafted. Managers were encouraged to explore and ask questions. Updates on Work Group activities were given at faculty and staff meetings as well as to external groups. Educational materials as well as all the documents produced by the Work Group were available to all staff.

In early October 2005, the Work Group presented a full and detailed draft of the Strategic

Plan to Management Council for discussion and response. The plan was well received by the Management Council, although there was great concern about how we would gather the metrics and complete the work in less than two years. All along we emphasized the fact that work on many of the specific objectives had already begun. Still, there were reservations about guidance and responsibility for implementation. The decision was made that Management Council would have oversight of the plan and that the workload would be shared among all members of the council, rather than delegated to a few.

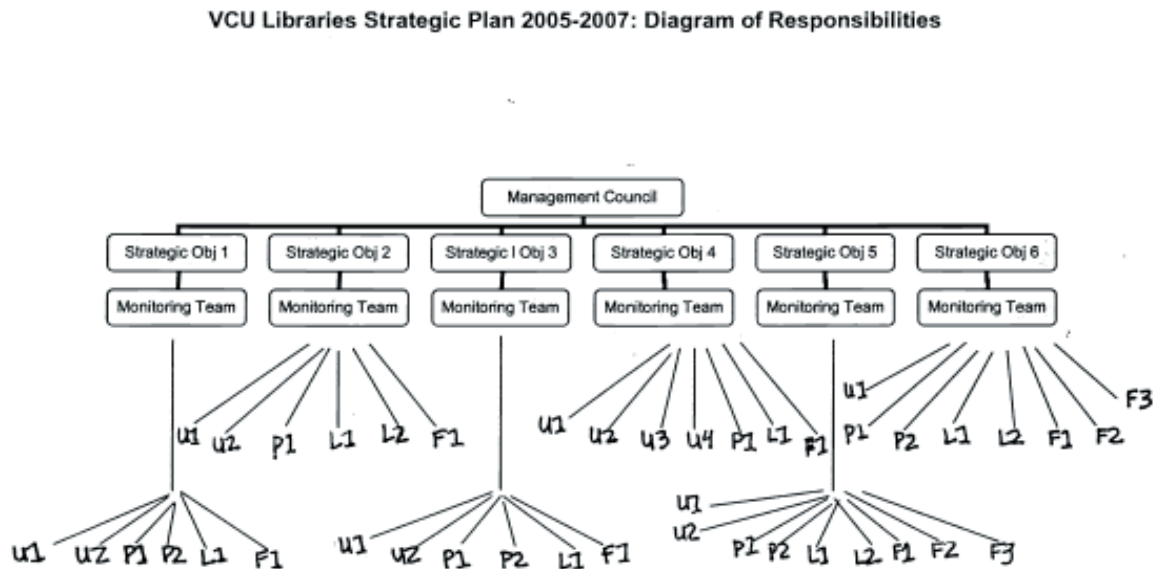
VII. Responsibilities and Roles

The next step was to prepare the Libraries staff for implementation. The Planning & Assessment Librarian worked with the University Librarian to develop a team based model. One important goal was to use human resources wisely and another was to provide a good level of support and organization to the implementation teams. We

created six teams with four to six members of the Management Council on each team. Figure 7

presents a generic diagram of responsibility for oversight of the Strategic Plan.

Figure 7: Strategic Plan Responsibilities



In assigning individuals to teams, each member of the Management Council, with just three exceptions, was assigned to one team as represented in Figure 7. We settled on the idea of a “monitoring” rather than implementing role for

these teams, an important distinction. We defined roles of the team members as well as the roles of team members including the Coordinator, the Administrative Council Liaison, and the Chief Data Resource Person(s).

Figure 8: Strategic Plan Roles

VCU Libraries Strategic Plan 2005-2007 Implementation: Role Description

<u>Monitoring Team</u> →	The Monitoring Team will: 1) refine measures and targets; 2) monitor progress toward targets; 3) alert Admin Council if progress falters; 4) make recommendations to Admin Council to correct problems; 5) choose a team leader
<u>AC Liaison</u> →	The Administrative Council Liaison will: 1) bring issues requiring action and/or decisions to Admin Council as needed; 2) work with the Coordinator as needed
<u>Coordinator</u> →	The Coordinator will: 1) lead Balanced Scorecard process; 2) support and guide each team; 3) work with each team to clarify measures and targets for specific objectives; 4) convene meetings of Monitoring Teams and subgroups; 5) design and manage a system to track progress; 6) prepare data
<u>Additional Staff</u> →	Additional Staff will: 1) be assigned to teams as needed to complete work, gather data for metrics, etc.; 2) be consulted; 3) be asked to provide information and/or assistance; 4) Some staff will be designated as Chief Data Resource Person(s) . These are the people who will do much of the legwork

While this may have been the most difficult part of our process, it is essential to define roles with sufficient detail when individuals and teams will be carrying out the work.

The members of the monitoring teams and their roles were listed in a table and distributed to the Management Council. Team assignments were made by the Planning & Assessment Librarian with input from the Administrative Council. Role Descriptions were reviewed before the Teams began to meet together in early 2006. A few staff

(non-members of Management Council) were assigned to the monitoring teams. The option for the Monitoring Teams to include more staff in the process is always there, and indeed is essential. The term “strategic objective” was replaced by the term “scorecard” as the plan morphed into an entity that could be more easily shared with staff and with the VCU community. Thus our top level strategic objectives are scorecards (User Services Scorecard, Research Scorecard, etc.). Specific objectives are tracked by ID number in the plan.

Figure 9: Monitoring Teams

VCU Libraries Strategic Plan 2005-2007 : Monitoring Teams							
Name		STR OBJ 1	STR OBJ 2	STR OBJ 3	STR OBJ 4	STR OBJ 5	STR OBJ 6
M a n a g e m e n t C o u n c i l	Anderson	o	Member	o	o	o	o
	Burton	Member	o	o	o	o	o
	Canevari	Member	o	o	o	o	o
	Cary	o	Member	o	o	o	o
	Chenault	o	o	o	o	o	Member
	Duke	o	AC Liaison	o	o	Member	o
	Ghaphery	o	o	Member	o	o	o
	Hollyfield	o	o	o	o	o	Member
	Koste	o	o	o	Member	o	o
	Lyons	AC Liaison	o	o	o	o	o
	Pathak	Coordinator	Coordinator	Coordinator	Coordinator	Coordinator	Coordinator
	Ream	o	o	Member	o	o	o
	Sampson	o	o	o	AC Liaison	o	o
	Selinger	o	o	o	Member	o	o
	Shipman	o	o	AC Liaison	o	o	o
	Spencer	Member	o	o	o	o	o
	Thomas	o	Member	o	o	o	o
	Turman	o	o	o	o	o	Member
	Ulmschneider	o	o	o	o	AC Liaison	AC Liaison
	Valent	o	o	o	o	Member	o
S t a f f	Jones	o	o	Member	o	o	o
	McColgan	o	o	o	o	o	Member
	Morrison	o	o	o	Member	o	o
	Separ	o	o	o	o	Member	o
	ETC						
	ETC						
	ETC						

The following Implementation schedule was also approved by the Management Council in early

November 2005.

2005	<i>November/December</i>	Review VCUL Strategic Plan with all units. Adopt final version.
2006	<i>April</i>	Report FY 2006 action to date on the Strategic Plan.
2006	<i>July</i>	Begin detailed reporting of FY 2006 data. Revise metrics as needed for FY 2007.
2006	<i>August</i>	Final review of Strategic Plan for FY 2007 data collection. Make adjustments.
2006	<i>December</i>	Publish FY 2006 Strategic Plan Report by December 15th.
2007	<i>January</i>	Report FY 2007 action to date on Strategic Plan.
2007	<i>July</i>	Begin detailed reporting period of FY 2007 data. Develop new metrics for FY 2008 and beyond.
2007	<i>September</i>	Review of action to date on Strategic Plan.
2007	<i>December</i>	Report the second year data. Publish Strategic Plan Report for FY 2007 by December 15th.

VIII. Communicators

Communication of the plan to internal and external audiences was so important that the Planning & Assessment Librarian developed a detailed

Communication Plan. This plan lists each event, location, time, persons presenting, purpose, and links to handouts, PowerPoint presentations, and Web pages.

Figure 10: Sample Communication Plan Items

VCU Libraries Strategic Plan 2005-2007: Communication Plan (Phase 1 / Rollout)

Event #	1 COMPLETED
Audience	VCUL Administrative Council
Purpose	Plan approval; input on implementation plan and responsibilities list
When	11-16-05 9:00am; 12-7-05 9:00am
Where	JBC Admin; TML Conference Room
Person(s) Presenting/ Facilitating	Ulmschneider, Pathak
Details	1) Approval of plan and objectives, adjustments needed, advice, etc. 2) Approval of implementation plan, adjustments, etc.
Web page and/or handouts	http://staff.library.vcu.edu/admin/plana/BalancedScorecardOverview.htm including plan itself, and drafts of Implementation plan and Communication plan.

Event #	2 COMPLETED
Audience	VCUL Management Council
Purpose	Plan approval & implementation plan.
When	January 4, 2006 9:00am
Where	TML Conference Room
Person(s) Presenting / Facilitating	Ulmschneider, Pathak
Details	Discussion of how work will proceed; role of Management Council; communications plan.
Web page and/or handouts	http://staff.library.vcu.edu/admin/plana/BalancedScorecardOverview.htm Communications Plan Monitoring Plan e-mail Susanna for handouts

Event #	3 Combined with Event #4 below.
Audience	VCUL Management Council
Purpose	Announce implementation plan approval <u>via e-mail</u> .
When	[late January 2006]
Where	virtual
Person(s) Presenting / Facilitating	Ulmschneider
Details	Monitoring teams are good to go. Initial meetings of teams will begin immediately.
Web page and/or handouts	Monitoring Teams document VCUL Strategic Plan 05-07 Workbook (current)

Event #	4 Completed
Audience	VCUL All Staff
Purpose	Announce Strategic Plan approval <u>via e-mail</u> . Encourage investigation and thought. Invite questions.
When	1-30-06
Where	virtual
Person(s) Presenting / Facilitating	Ulmschneider, Pathak
Details	Announce Strategic Plan availability via email. Refer to Web page. Include link to ppt presentation given at All Staff meeting on 1/12/06. Invite questions to Susanna or John. .
Web page and/or handouts	Text of John U's email http://staff.library.vcu.edu/admin/plana/BalancedScorecardOverview.htm <i>PowerPoint Presentation VCU Libraries Strategic Plan [January 2006]</i>

Event #	5 Completed
Audience	VCU Libraries Advisory Council (VLAC)
Purpose	Presentation of the Strategic Plan
When	02-10-06 2:30 PM
Where	TML
Person(s) Presenting/facilitating	Ulmschneider
Details	<i>PowerPoint</i> presentation and discussion.
Web page and/or handouts	<i>PowerPoint</i> Presentation VCU Libraries Strategic Plan [February 2006] Strategic Plan (full) for Strategic Objective 1 (example) Strategic Objectives and Mission-Vision-Values Foundations [January 2006] Public page for Strategic Plan

Event #	6 COMPLETED
Audience	VCUL Faculty [Admin Meeting of Faculty Organization]
Purpose	Discussion of the Strategic Plan
When	12-14-05; 2:30-3:30PM
Where	TML
Person(s) Presenting / Facilitating	Pathak, members of the Strategic Plan Work Group
Details	Pathak will do presentation. Discussion to clarify objectives and process. Clarification of roles.
Web page and/or handouts	http://staff.library.vcu.edu/admin/plana/BalancedScorecardOverview.htm Broad Strategic Objectives and Language from our Mission-Vision-Values Statement Sample Plan Detail--1. User Centered Services

Event #	7 COMPLETED
Audience	VCUL All Staff Meeting
Purpose	Presentation & Discussion of the Strategic Plan
When	01-12-06 2:00 PM
Where	Lyons Building Student Lounge (MCV Campus)
Person(s) Presenting/facilitating	Ulmschneider, Pathak
Details	Encourage discussion. Emphasize role of all staff.
Web page and/or handouts	VCU Libraries Mission-Vision-Values Statement Broad Strategic Objectives and Language from our Mission-Vision-Values Statement Diagram of Strategic Plan Responsibilities [hardcopy only] Strategic Plan (full) for Strategic Objective 1 (example) <i>PowerPoint</i> Presentation VCU Libraries Strategic Plan [January 2006] http://staff.library.vcu.edu/admin/plana/BalancedScorecardOverview.htm

Event #	8 COMPLETED
Audience	VCU Humanities and Sciences Advisory Committee
Purpose	Presentation of the Strategic Plan
When	01-20-06 3:00-4:00 PM
Where	JBC
Person(s) Presenting/facilitating	Ulmschneider
Details	<i>PowerPoint</i> presentation & discussion.
Web page and/or handouts	<i>PowerPoint</i> Presentation VCU Libraries Strategic Plan [January 2006] Strategic Objectives and Mission-Vision-Values Foundations [January 2006] Strategic Plan (full) for Strategic Objective 1 (example) Diagram of Balanced Scorecard Basics

IX. Teams

The Monitoring Teams were initially tasked with reviewing and refining measures and targets and designating Chief Data Resource Person(s) to gather the metrics. As the Coordinator for each of the Teams, the Planning & Assessment Librarian guided the process and facilitated the work of the teams. Online "Workspace" for each team was created with documents and resources such as a BSC glossary and guidance on aligning measures with strategic initiatives. Teams met once or twice

in February and March 2006 to accomplish their initial tasks. Meetings took place in a collaboration room where the teams were able to make good use of technology to view the detailed scorecards and supportive documentation (see Figure 11). Team members were exceptionally well prepared for the meetings.

Team meetings were 1.5 hours in length. Most teams completed their work in two meetings. At each meeting team members were selected as recorders and given paper tablets for note taking.

Tablet titles included: Decisions, Changes to the Plan, Investigation, Administrative Council (decisions needed to proceed), and the Parking Lot. Guidance on aligning objectives and measures was provided by the Coordinator on a handout. It was used frequently as the Team worked through the process of defining metrics. The Team meetings

were highly productive. After the meetings, the Coordinator compiled notes from the tablets to produce a detailed form for each Specific Objective in the plan. Again, all of the documents and forms are easily accessible on internal Web pages maintained by the Coordinator.

Figure 11: Workspace Team Example

TEAM #4 Physical Environment: Workspace

Members	Jodi Koste [Leader], David Morrison, Susanna Pathak [Coordinator], Walter Sampson[AC Liaison], Patricia Selinger
Meeting Schedule	Tuesday April 4th -- 11:15-12:15am JBC Collaboration Tuesday February 21-- 8:30am-10am JBC Collaboration Room
Documents	See Workbook (below)
Task List	1) Review STR OBJ #4 measures and targets; 2) align and adjust plans; 3) develop action plan for each specific objective; 4) first progress report due April 2006;
Workbook	contains latest version of full VCU Libraries Strategic Plan 2005-2007; tab "g" is PHYSICAL ENVIRONMENT objective
Key BSC Resources	Balanced Scorecard Primer [Source: Library Balanced Scorecard: A Tutorial -- An IMLS funded project, Chula Vista Public Library Web site] Balanced Scorecard Glossary [Source: Library Balanced Scorecard: A Tutorial --An IMLS funded project, Chula Vista Public Library Web site] Balanced Scorecard Step-by-Step for Government and Nonprofit Agencies. Paul R. Niven. New York: John Wiley, 2003. [available in VCU NetLibrary collection] Questions for Strategic Planners to Ask http://www.balancedscorecard.org/metrics/planner_questions.html

X. Reporters

Reporting details are built into the implementation plan. An internal Web page for each of the forty-three specific objectives includes measures and targets with "Chief Data Resource Persons" identified for each measure. The chiefs work on their own and with the Coordinator and the Team Leader as needed to complete the legwork. Reporting, tracked on Excel spreadsheets and

coverted to Web pages, allows for the inclusion of data and full reports. However, the need for concise reporting of metrics has been stressed throughout. The reporting forms include space for plans, notes, and investigations. Reporting is done with the Coordinator assisting and reviewing content. So far, all the reporting is internal, but soon, some reporting will be included on the publicly accessible VCU Libraries scorecards.

Figure 12: Reporting Grid Sample

1. User Centered Services Scorecard [Reporting Grid]		
monitoring team:	Burton, Canevari(Leader), Lyons (AC Liaison), Pathak (Coordinator), Spencer, Thomas	
id	U2 [link to full plan details]	
objective	Easy access to resources not available at the VCU Libraries	
		chief data resource person
meas 1	ILL fill rate and turnaround time;	Thomas
meas 2	VCUL benchmark data;	Thomas
meas 3	LibQual gap scores for IC-11	Pathak
target 1	Improved ILL turnaround time ; Improved ILL fill rate	
target 2		
target 3	Positive gap score for LibQual IC-11	
plans	Investigate user resistance to ILL services; Increase visibility of ILL; Increase ease of use of ILL services; Investigate and model peers	
investigate	Better integrate ILL services	
notes		
report 4/06	Thomas prepared benchmark data report;	
action		
report 7/06		
report 10/06		
report 4/07		
report 7/07		

XI. Living the Plan

Use of public and internal Web pages has enabled the Libraries staff to access fully detailed Strategic Plan and related documentation with ease and convenience. While no formal assessment on the implementation process has been done, informal assessment suggests that the BSC plan is easier to live with and to live by than previous strategic plans. The six top level initiatives are linked to the Libraries' mission and vision with language is easy to recall: User Services, Research, Education & Advocacy, Physical Environment, Development & Financial, and Staff/Staffing. Team leaders as well as individual chief data resource persons consult with the Coordinator as they gather data for metrics and plan and deliver reporting. Since the plan itself is so detailed, the work to be done is for the most part, quite clear. As adjustments need to made, they are made. The most current versions of the log

sheets for each specific objective are always available on an internal Web page.

The work of developing new and emerging projects and programs is supported by quick checks of the many specific objectives. We are always willing to choose better (meaning more strategic) measures and targets when the opportunity is there to create them. Recently, VCU Libraries established a five member Scholarly Communication team and sent three members of the team to the ARL/ACRL Scholarly Communications Institute at UCLA in July 2006. When the new Scholarly Communications Team began to develop a proposal for year one of a scholarly communications program, prioritizing ideas and initiatives was guided in part by several of the specific objectives on our "Research" and "Education & Advocacy" scorecards.

Figure 13: Scholarly Communications Program DRAFT

Scholarly Communications Program [DRAFT]

Year One

September 2006

- Establish the Scholarly Communication team
- Define Scholarly Communications Program, for the team and for the university
- Educate VCU Libraries faculty on all issues
[StPln 3L1: Prepare library faculty and staff for educational and advocacy role]
- Identify potential key groups and individuals, early adopters in VCU community
- Identify research activities in progress at VCU
[StPln 3U2: Lead University community in contemporary scholarly communication issues and initiatives (including copyright)]
- Establish liaison relationships with faculty scholars, editors, and advocates
- Develop the Institutional Repository
[StPln 2U2: Participate with VCU faculty in community related initiatives that add to VCU's research knowledge base]
- Prepare educational materials, marketing, publicity, workshops and programs
[StPln 3P1: Devise promotional campaign to encourage participation in initiatives]

The experience of ramping up a new program this way was indeed streamlined and efficient. Checking our scorecards is becoming for many staff a natural part of living with a highly detailed and focused strategic plan. There are fields on the scorecards to record plans and notes as well as things under investigation. It is a vital document. The scorecards are tremendously useful documents to live by and work by. More generally, the BSC approach is proving to be well worth the time spent planning it, drafting it, and refining it to produce our two year strategic plan. And as the results are pulled together in a framework we have carefully designed and, as results are shared with our users, a new higher level of accountability to us and our users is being achieved.

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Endnotes

1. University of Virginia Libraries, "Balanced Scorecard at the University of Virginia Libraries" <http://www.lib.virginia.edu/bsc/index.html>.
2. University of Florida, "Strategic Planning Webpages," <http://www.uflib.ufl.edu/toolbox/uf0102cards.html> [no longer available online].
3. Paul R. Niven, *Balanced Scorecard Step-by-Step for Government and Nonprofit Agencies* (New York: John Wiley, 2003).

From Organizational Assessment to Organizational Change: The University of Maryland Library Experience

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Abstract

The issues of diversity and organizational climate are of major concern to many academic institutions. These factors are measures of organizational health, and healthy organizations are more effective. The University of Maryland (UM) Libraries, as a team-based learning organization, is committed to addressing the issues of diversity and organizational climate through its assessment activities. Key to this is the Libraries' commitment to service excellence at all levels to build a culture of shared vision, values and leadership.

The UM Libraries' change process began in 1996 and has affected every member in the organization. These changes range include the development of a new service philosophy, formation of teams, data driven decision-making, and the creation of a comprehensive learning program. Since 1996, several assessment processes have been conducted, resulting in additional organizational changes. Two such assessment activities are the Individual-Team-Organization (ITO) survey and the Organizational Climate and Diversity Assessment (OCDA).

The ITO Survey is a commercially available instrument that looks at three components of an organization: individual members in the organization, teams that make up the organization and the organization itself. First administered in 1998, the survey was repeated in 2000 and 2003, insuring the Libraries' ability to gauge the transition to an effective team environment over time. Areas to improve have been noted and

changes made with the analysis of data for each survey period. Gauging the extent of continuous improvement is a critical element of this assessment tool.

The OCDA was developed specifically for the UM Libraries in partnership with the UM Department of Industrial and Organizational Psychology. The OCDA addresses issues of climate for diversity, teamwork, learning and fairness—key elements of a successful institution. Results of the 2000 OCDA not only offered insight in the areas of work and diversity climate and culture for the UM Libraries, but also provided a baseline against which the effectiveness of its interventions could be determined. In 2004, a revised OCDA survey was administered. The new instrument included measures of climates for teamwork and continual learning, current managerial practices, and the individual's attitudes and beliefs, and provided an updated snapshot of the diversity and organizational climate of the Libraries.

Transforming the culture of a library organization is not an easy task. It involves personal development and mastery as well as continually clarifying and maintaining the larger vision for change. Immediate identification of "enablers" and "barriers" to assessment is critical in determining success strategies as well as knowing what could be considered "pitfalls" to avoid in reaching desired goals. The ITO and OCDA surveys have given the UM Libraries the opportunity to identify several such "enablers" and "barriers".

Context—OD in the UM Libraries

The use of assessment at the University of Maryland Libraries is a vital part of measuring progress, developing corrective interventions and establishing a culture of fact-based decision-making that underlies organizational development (OD) efforts. There are many strategies that are central to this effort and assessment, the theme of this conference, is one of the most important.

Organizational development should be continuous in the face of change; such change is creating discontinuity and significant disintermediation between academic libraries and the delivery of information to our students and faculty. At the very least, this means that those who work in libraries must cope with the very real fact that the kind of work they do today is unlikely to be what they will be doing in the future. The notion that part of the job is to change the job must be embraced.

Assessment efforts at UMD—particularly the Organizational Climate and Diversity Assessment (OCDA) and Individual Team Organization (ITO) surveys—can be viewed as integral to the Libraries' efforts towards continuous organizational development (COD). COD includes some key features that must be reflected in library programs and culture; and these should include, at least, the components of teamwork, learning, leadership, measurement, as well as the people to execute the effort as part of their work. Staff in critical roles are needed to carry out not only the assessment activities but also those strategies that effect the corrective actions once they have been identified, which can include planning, systems design, process re-engineering, assessment, facilitation, skills training, and performance review. Above all, while COD will not take a monolithic form for all libraries, it should be structural and continuous, not incidental and episodic. The challenge is to imbed these features in a COD program that is appreciated as a part of operations like any other and is accepted as part of everyone's job. This latter condition may be the hardest to achieve, but it is not impossible.

The University of Maryland Libraries started out on the path toward COD in 1997 by acquiring the human/organizational resources to focus on planning, learning, and assessment, and by emphasizing teamwork. The first steps were the creation of a directorate for planning (1997) and the formation of self-managed teams (1998). Establishing a continuous planning capability was vital for our organizational development. However,

it was not until 2000 that the organization fully articulated what had become a sense of urgency to change our organization to better meet the needs of faculty, staff, and students. "Working Paper #1 on Team Management: The Vision of a Team-Based Organization", the first in a series of working papers, described how a focus on planning for the future and the formation of self-managed teams will lead to an improved organization.¹ It reflected elements of change that had already begun, and helped galvanize the Libraries' general direction. It became clear that this vision of COD needed to be systemic and systematic.

Key offices were created to support the Libraries' COD program. These include the Staff Learning and Development Office (1997), Organizational Development (2000), and Personnel Programs in the Human Resources Office (HR) in 2001.² These offices work closely together to advance the COD program, and utilize the Facilitators Team,³ created in 2001, as a key agent in their work. Having the committed staff resources is, of course, an enormous step in the direction of building a rigorous program. Together, these three programmatic areas support the libraries' individual and organizational advancement and work closely to provide resources and tools for library staff. The Staff Learning and Development Office provides educational programs and resources for 300+ staff in the libraries, under the umbrella of the Learning Curriculum, the Libraries' comprehensive education and training program.⁴ The Organizational Development Office supports the efforts of the team-based learning organization through the planning and design of systems and processes, and training and facilitation for teams, units, and workgroups. The Libraries' HRO provides human resource management programs and services to library faculty, staff, graduate assistants, and student employees. By doing so, the HRO helps the Libraries maintain a diverse population of motivated and skilled staff. These offices also collaborate with other individuals and groups in the libraries to create and implement programs/services.

While each of these offices supports development of the organization and its staff, the locus of the measurement and assessment efforts is the Management Information Systems (MIS) office, established in 1998 to provide statistical information about the UM Libraries and our Association of Research Libraries (ARL) peer libraries.⁵ It plays a critical role in leading our

participation in national programs such as LibQUAL+® and SAILS. Equally important, MIS implements and provides analysis for library surveys in support of our decision-making and process improvement. As organizational development in the libraries has evolved, MIS has played a critical role in helping shape a fact-based model for decision-making.

The MIS office has been directly engaged in critical measurement work for COD, through its involvement in development of the first OCDA survey in 2000. Working with the University of Maryland Industrial/Organizational Psychology Program, this survey was developed, tested, and administered. It provided critical information for understanding the enablers and barriers to implementation of our organizational development efforts. Similarly, the Organizational Development Office has applied the ITO Survey for several years. The ITO instrument measures the extent to which a group understands how a team works and is able to function as a team. The periodic application of the ITO Survey has helped us assess the progress of teamwork as a central principle in our organizational work. Both the OCDA and ITO instruments provide information that other libraries may find useful in assessing organizational conditions that are vital to effective performance.⁶ For the UM Libraries, these assessment efforts provide the critical information about progress of key elements in our COD that allows us to develop constructive interventions.

The ITO Survey at UMD

The ITO Survey is a commercially-available instrument that looks at three components of an organization: individual members of the organization, teams that make up the organization and the organization itself.⁷ The instrument has 52 statements divided into three sections using a Likert Scale that covers a range from 5 (almost always) to 0 (almost never). Respondents indicate their perception of the frequency with which certain conditions or behaviors occur in the organization in the first three sections of the survey. *Section One* focuses on how someone sees himself/herself and co-workers as individuals with regard to role clarity, satisfaction, rewards, communication, collaboration, risks and influence. *Section Two* focuses on team dynamics regarding the following issues: leadership, meetings, conflict, problem-solving, productivity, and team purpose. In *Section Three*, respondents consider issues such

as planning, structure, procedures, climate, stress and purpose within the organization. In the last section of the survey, *Section Four*, respondents are asked to rank the issues identified in the first three sections in order of importance for needing attention.

The ITO Survey has been administered three times: 1998, 2000, and 2003. The survey was given to thirty-six librarians in the Public Services Division in 1998, including the librarians assigned to new Subject Teams and other librarians not on any of the three teams, but working in the Public Services Division. There were three goals for use of the ITO Survey in 1998: identify learning and training needs for team members; generate baseline data so that change could be gauged over time; and identify areas where the teams and the organization can grow. The results from the twenty-five returned surveys (69% return rate) were used to identify ways to support team development. Decision-making and problem solving, the role of team leaders, quality service and continuous improvement were a few of the topics targeted to discover ways to support the development of these teams.

Over the course of the next two years, work was being done on developing team mission and vision statements and identifying roles and responsibilities in the team concept. Based on anecdotal feedback, it was agreed there was a need for more focus on the collaborative dynamics between and among the subject teams and other librarians. A major development for the Libraries was the addition of ten librarians to the subject teams in 1999. In addition, an internal facilitator position was created in 2000 to focus attention on team and organizational development issues.

The survey was repeated in 2000 with this same librarian group in Public Services in order to help the Libraries gauge the continuing transition to an effective team environment. A total of thirty-one surveys were returned for a 78% return rate. The librarians completing the survey responded positively in a number of areas: role clarity, job satisfaction, collaboration and sense of purpose for the individual and for the organization. There was also improvement in several other areas including communication among colleagues, team conflict management and team productivity. On the other hand, there were several key areas of the 2000 survey that were ranked negatively as compared to the 1998 survey. These areas focused on the reward process, the feeling of not knowing when

something important happens or is about to happen, the sense of not having clear goals, and concern about the leadership of teams. Another area needing attention was helping librarians manage their time and the multiple demands they face as library faculty. The Subject Teams gave attention to these issues in a variety of ways through training, team meetings, etc. The results of the 2000 survey along with data from the OCDA survey were instrumental in the creation of the Learning Curriculum. Development of skills in the areas noted as challenges was considered critical in furthering the growth of teams.

When the survey was administered for a third time in 2003, three new groups of teams had been added to the participant group along with the Subject Teams: Production Groups and Coordinating Teams in the Technical Services Division, and Functional Teams in the Public Services Division. Adding these three sets of teams provided more baseline data on how staff viewed their work on teams. This was also an opportunity to again gauge what had changed or stayed the same for the Subject Teams. The return rate for this survey was 70%, with 119 librarians and staff out of 171 participating.⁸

Surveying members of the Coordinating Teams and the Functional Teams meant that approximately eighty-nine librarians and staff would be completing the survey more than once because of membership on more than one team. For the first time, library staff were included as participants because of their membership on Production Groups, Coordinating or Functional Teams. Again, as each team received its results, the members discussed issues pertinent to the team and in a number of cases, identified specific strategies to address areas needing attention.

A number of areas were noted as positive for the four team groups. Several of these areas focused on the individual, where members feel they serve an important function in their teams and the organization. The survey revealed there is a high level of collaboration among members and they are able to solve problems effectively. There is also a clear understanding of the purpose of teams. Some of the areas that the teams believe need further attention are leadership, rewards and decision-making.

The comparative data for the Subject Teams shows improvements across the three survey periods, in particular, in the areas of team leadership, the team's place in the organization, the

influence of the team, and the working relationships members have with one another. The improvement in team leadership is noteworthy because the subject teams were the first groups in the Libraries to focus on the role of the leader in a new environment of shared responsibility and decision-making. This has required not only the development of new skills for many people but also the creation of new expectations for every member of the Libraries. The Subject Teams identified several areas where ongoing support would be helpful. One area is how to more effectively use meeting time to get work done and solve problems. A second area is improving their understanding of how to move recommendations and solutions to problems forward in the organization.

Librarians and staff who participated in the ITO Survey have positive indicators for a number of areas in each of the first three sections. As expected, there is variation from one team to another with respect to each level on the Likert Scale. Role clarity, job satisfaction, communication, collaboration, productivity, team purpose, climate, and organizational purpose are noted positive areas. However, what is viewed as strengths for one team does in fact appear as areas of needed improvement for another. There are also common areas where the team groups agree on what needs attention. These include the areas of rewards, risk taking, problem solving, meeting effectiveness, team influence, stress management, and time management.

Ongoing assessment and education are each critical components for the development of individuals, teams and the organization. It is important to mark progress because it is a valuable learning tool. The results from the 2003 survey clearly show that progress has been made, but more work is needed. Continuous improvement is firmly part of the culture of the UM Libraries. The ITO Survey will continue to be used with teams as a way to help them measure growth and change.

The OCDA at UMD

Unlike the commercially-available ITO, the OCDA was developed specifically for the UM Libraries in partnership with the UM Industrial and Organizational Psychology (I/OP) program. The OCDA addresses issues of climate for diversity, teamwork, learning and fairness—key elements of a successful institution.

In 1999, the UM Libraries Diversity Committee began planning for diversity training and proposed

an assessment be conducted to determine the need for such training and what areas should be covered. In the fall of 1999 the chair of the campus Industrial/Organizational Psychology program was approached about conducting a diversity needs assessment for the Libraries. The I/OP program agreed, and subsequently developed the OCDA.

The OCDA was created for the Libraries after the research team reviewed the I/O Psychology and management literature for pre-existing scales that measured organizational climate and culture constructs and those surrounding diversity and gender/racial discrimination. In addition, I/OP team members conducted a series of focus groups with UM Library staff to identify themes surrounding diversity and discrimination that were not mentioned in the published literature because they were unique to a library setting. The first version of the OCDA was distributed to the UM Library staff in 2000. Over seventeen percent of library staff participated in the focus groups, while 81.8 percent of library staff took advantage of the opportunity to complete the print-based survey. A written feedback report was provided to the UM Library Executive Council as well as the library staff in August 2000.⁹ The results not only offered insight in the areas of work and diversity climate and culture for the UM Libraries, but also provided a baseline against which the effectiveness of its interventions could be determined.

The survey report recommended action in the areas of managerial training, standardization of procedures, recruitment, and selection of ethnic minorities for managerial positions, empowerment and trust, and mentoring and diversity training. As a result, a number of recommendations or “interventions” occurred in years following the survey, including:

- establishment of monthly-all staff meetings to enhance information sharing;
- development of the Learning Curriculum;
- strengthened administrative support for professional development;
- creation of the Coordinator of Personnel Programs position.

In November of 2003, Working Paper #7, *Shared Leadership Development in the UM Libraries*¹⁰ was distributed, and included a number of activities identified to support shared leadership development. One recommendation was to conduct a “repeat” of the OCDA. In 2004, the I/O

Psychology program collaborated with the UM Libraries to administer a revised and refined OCDA survey. As in the original study, the assessment process included two components: focus groups and a large-scale survey. Focus groups were held to identify any additional themes of concern for the UM Libraries. Over 19% of Library staff participated in these focus groups. Issues which surfaced in the focus groups centered on team climate, dissemination of information, interpersonal relations, and climate for learning. Additionally, the I/O program re-reviewed the I/O Psychology and management literature to find pre-existing scales that measured additional constructs that arose from the focus groups. The resulting survey consisted of 300 questions in two sections, and included demographic questions to allow for division-level analysis not possible in the first survey. Overall objectives of this assessment were to measure the climate for diversity and fairness, as well as measure individual attitudes toward work withdrawal and job satisfaction. Themes of team development and organizational commitment were included in this new survey, which was completed by 71.1% of library staff.

Following administration of the survey, all-staff presentations were held whereby the research team provided an overview of key survey findings.¹¹ In addition, the written feedback report was provided to the UM Library Executive Council, as well as the library staff.¹² In comparing 2000 OCDA baseline data with 2004 data, the report showed that the diversity interventions that were implemented as a result of the 2000 feedback report resulted in several positive changes over the four year period. Most notably, there were improvements in the following areas:

- libraries’ support of diversity;
- employees kept well-informed;
- libraries have non-discriminatory practices;
- employees are fairly treated.¹³

Results of the team climate portion of the focus groups were mixed. While the results indicated the team structure is useful in the UM Libraries, and that teams could be perceived as being useful for building connections within divisions and units, there was some feeling that teams were unnecessary and that participation on teams that teamwork “takes [employees] away from doing their primary job tasks.”¹⁴ The assessment also revealed an increase in organizational withdrawal from 2000 to 2004, as well as consistent

ethnic/divisional differences, which warranted additional assessment.

In their closing remarks to the 2004 survey report, the research team noted:

Clearly, it is important for the UM Libraries to continue to work on issues of diversity, fairness, teamwork, and learning climate. Efforts made by the Libraries in the last four years have lead to many positive changes. Looking toward the future, it is important for that the systematic differences that appear to be splintering some of the divisions and ethnic groups within the Libraries be assessed and reduced so that the UM Libraries can maintain its progress.¹⁵

As a result, the I/O Program continues to work with the UM Libraries through follow-up focus group sessions with two divisions in order to more fully explore issues which arose in the study. Additionally, the Library Executive Council is currently identifying strategies underway in each division to address issues raised by the survey.

In January 2006, the UM Libraries, in partnership with ARL and the I/O Program, submitted an IMLS National Leadership Grant proposal to take the OCDA existing assessment and establish an instrument that can be used across institutions and that correlates with LibQUAL+®. Results of this grant proposal are pending. Regardless of the results of the grant proposal, the UM Libraries remain committed the issues of climate and culture as identified in the survey, and will continue to conduct the survey in regular intervals.

Enablers and Barriers to Assessment Creating a Supportive Culture of Assessment Helps Identify Enablers and Barriers

Immediate identification of enablers and barriers makes it possible to create a positive climate and culture for assessment and the change process. Both the ITO and OCDA surveys provided the UM Libraries the opportunity to identify several such enablers and barriers. There are two types of "enablers" and "barriers": tangible and intangible. Tangible enablers and barriers are those elements that can be readily observed and measured, while intangible enablers and barriers are those that are abstract and are not easily observed, but have power and ability to create a positive or negative impact on any given change process. In many instances "enablers" and "barriers" can be

transformed depending upon the depth and degree of how change is planned, perceived and managed. "Enablers" inevitably serve as those guiding points that help move the agenda, while "barriers" broaden or increase the gap between goals and perceptions of reality.

David Garvin identifies risk taking as a valuable element in determining enablers and barriers. Although his article "Building a Learning Organization" does not call them enablers and barriers, the context is relative to this discussion. Garvin adds to the description of a learning organization as "an organization skilled at creating, acquiring and transferring its knowledge, and at modifying its behavior to reflect new knowledge and insights." His research states the need for meaning, management, and measurement in creating a healthy learning organization.¹⁶

The UM Libraries' organizational framework serves as a management process for change. Based upon assessment results, the framework can be considered a tangible enabler, for it has emphasized the development of staff to improve the organization's performance. It can also be considered a foundational enabler since it provides direction, and strategies for support and ownership. These components, which can be mapped to enablers and barriers for change, include:

- Valuing learning and education that leads to improved service to customers;
- Assessing and improving work processes through process re-engineering;
- Forming self-managing teams;
- Fostering shared decision-making and accountability among all library staff;
- Development of shared leadership by strengthening the leadership skills of all library staff; and
- Changing the culture of the organization by creating and nurturing a shared vision and set of values by which all staff can live.

These components have created an impetus for congruence of the Libraries' mission with the University of Maryland's aspiration for excellence.¹⁷

Valuing Learning and Education

The learning organization provides ongoing opportunities for personal development and mastery as well as continually clarifying and maintaining the larger vision for change. Early on in its plan for change, the UM Libraries adopted Peter Senge's definition of learning organizations:

"organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together."¹⁸ This commitment requires that an ongoing process be identified for learning, growth, and development. The major resource developed for this process has been the Libraries' Learning Curriculum, an outgrowth of the 2000 ITO and OCDA surveys. The UM Libraries' *Strategic Plan*¹⁹ also serves as an "enabler," for it is a critical tool for organizational planning and visioning for the future.

A major external barrier to the development of library staff has been economics. For several years, the University had been under a hiring freeze, creating problems for filling much-needed positions. As a result, the Libraries were "short-staffed." This created an internal barrier to development for some because service points had to be covered in order to maintain quality service. The end result for an extended period of time for some was "burnout" and low morale. In addition, the Libraries have begun to experience a significant number of retirements, creating concerns for replacing experience and expertise.

Another critical internal barrier to change occurs when library staff members do not view professional development as part of the job responsibility. Some have found it difficult to find a balance between meeting production requirements of job responsibilities, and personal and professional development.

Assessing and Improving Work Processes

Love's research on assessment of diversity found that the process of assessment means constantly being aware of the external and internal barriers to assessment, as they impact services and operations of the library as well as learning and participation. External barriers are those factors that are environmental; while internal barriers are those created organizationally and attitudinally, as in culture. Thus, value is added to the notion that assessment and strategies for change cannot be considered a "quick fix."²⁰ When assessment is used carelessly and is untimely, it can become a "barrier" to future opportunities of evaluation, benchmarking, and strategic planning.

Assessment is a tangible way of providing proof of the need for change, for it is essential to have a

clear understanding as to how organizational change can be focused, ongoing, and maintained. As noted earlier, the assessment process within itself is a tangible "enabler." The UM Libraries have used it most effectively through the ITO and OCDA surveys.

Anonymity in the assessment process promotes freedom of expression and serves as a significant enabler to ensure feedback. Follow-up as well as follow-through on recommendations made in assessments provide tangible evidence of the validity of the assessment process. Keeping library staff informed is also a valuable enabler and inevitably creates opportunity for future assessment, benchmarking and long-term change.

Forming Self-Managing Teams

To fulfill the goals of becoming a team-based learning organization, the UM Libraries are gradually implementing a comprehensive training system via the Learning Curriculum. As previously mentioned, the ITO assessment was used to identify ways to support teams in their development and has provided much needed direction for learning and team building strategies. It has served as an "enabler" in moving the agenda for team development ahead. The ITO enabled teams to see the need for greater communication among members as well as team conflict management and productivity. Just as the process for team development serves as an enabler in working toward greater productivity and communication, barriers could easily become evident if conflict or problems were not addressed and/or resolved in an immediate and equitable manner.

Being a team-based organization means placing greater emphasis on a higher level of communication that is actualized from various levels and systems. If this is not sustained, it becomes a major internal barrier. Time management could also serve as a barrier if library staff were not equipped to manage the multiple demands placed on their time. One major barrier to an organization's effectiveness is when there are perceptions of injustice. Whether some may feel it is not a true picture of the situation, it must be addressed because it is reality for some. Colquitt's model for organizational justice made it possible for the UM Libraries to assess the existence of this particular barrier in its 2004 OCDA survey.²¹

Developing Shared Leadership and Leadership Skills

As a team-based organization, the UM Libraries consistently addresses defining, clarifying, and practicing shared leadership skill development. Key issues in shared leadership are decision-making and accountability, which need to be fostered and developed in a number of ways. Both the ITO and OCDA assessments pointed out the need for supervisory skill training and this training is an important component of the Learning Curriculum.

One of the key individual developmental barriers has been for those library staff in leadership positions. They have been asked to behave in ways that, for some, require new behaviors and skills while others require a leadership model different than anything they have done in their previous work experience. In addition, much of the barrier created for staff stems from the lack of understanding of what shared leadership is in the learning organization. The process for shared leadership begins at the top and serves as a model to all. "Walking the talk" means support from top administrators for leaders in a variety of ways, but most importantly by modeling leadership qualities expected of all staff.

When there is a lack of common understanding and ownership for leadership, multiple barriers are created. The breakdown becomes a combination of barriers taking place at the same time, affecting individual and team performance as library staff try to provide service. The impact of this barrier is much like the "domino effect." Library staff have a tendency to revert back to the hierarchical leadership style and to want others to make decisions for them when they do not see evidence of inclusiveness and modeling of shared leadership.

A fundamental concept of shared leadership is that all library staff at one time or other may have opportunity to play one of two roles, that of leader and that of follower. When there is a lack of a common understanding of these roles, barriers are created to achieving the desired levels of quality and productivity. In addition, when library staff opt out or find it difficult to assume leadership roles it creates another dimension to this barrier and to the concept of shared leadership.

Developing core competencies for shared leadership is an important enabler. They provide goals for all to aspire to. The competencies identify characteristics of high performing managers and aid in judging strengths and weaknesses of personal leadership qualities. A better

understanding of one's leadership style and personal values can contribute to managerial effectiveness.²²

Opportunities have increased for supervisors to develop decision-making skills by participation in the UM Leadership Development Institute (LDI).²³ However, barriers to shared-decision making process still exist, including a lack of incentives for staff, burnout, and lack of articulation of expectations and responsibilities of staff in formal or supervisory roles.

Even though great strides have been made to create a culture for shared leadership training and development, it is still a challenge to advance the team structure. Emphasis and efforts to build a culture for shared leadership in the UM Libraries encompasses a three-pronged approach: organizational development, staff learning, and personnel programs. Over time, leadership development could have been a major "barrier" to the process of change if staff had not been in place to maintain this vision and focus. This is something the UM Libraries continue to seek ways to address, and realize this is still a "work in progress."

Changing the Culture and Nurturing Shared Vision and Values

Researchers Donahoe, Hargreaves and Fink, and Watts and Castle all state that leading barriers to organizational assessment and change are its structure, time and culture.²⁴ Barriers such as these give rise to resistance and conflict among those involved in the change process. The more heterogeneous and diverse the group, the more resistance and conflict arise. Additionally, Fullan points out the necessity for managing resistance and conflict as part of the change process. Resistance and conflict could be considered definite "barriers" to progress, but when conflict is recognized as healthy and manageable, it contains the seeds of growth and change.²⁵ Gaining library staff support and planning strategies for managing conflict for overcoming barriers should always be a priority for ongoing change.

Garvin's research supports the assumption that when there is a supportive culture that encourages risk taking, decision-making and experimentation, organizational learning takes place at a faster pace. The library staff must feel they are able to offer feedback and identify problems without fear of retribution and/or punishment. A lack of trust and risk taking within the organization does not allow for free expression, thereby becoming a major

barrier to the organization's change and progress.²⁶

Consideration should also be given to various types and sizes of library organizations. What works well in one library organization may not be as effective in another. Therefore it is critical to realize that existing cultures must be considered when taking into account the momentum of change. Identifying early on those elements that are considered "enablers" and/or "barriers" to assessment and the change process is critical in determining success strategies as well as knowing what could be considered "pitfalls" to avoid in reaching desired goals.

When a vision is shared, the hope is that a greater sense of commitment will be developed within the organization. The goal is to share images of the future with the hope that guiding principles and practices would emerge. But it is not always as simple as that. Transforming the culture of a library organization is not an easy task for the human interaction element produces multiple dimensions and perspectives on how change should occur.

Conclusion

Since the UM Libraries first engaged in COD, we have learned the central importance of strengthening our work culture through library programs, working on teamwork, learning, leadership development, and continuous measurement.²⁷ The challenge has been, and continues to be, to imbed these elements in all of our organizational structures and operations through systems design, process re-engineering, assessment, skills training, and performance review.²⁸ We have gradually come to realize that this work will never be finished—and that is a central concept for COD. Old attitudes and resistance to change will always make progress uneven—faster in some areas than others. Staff turnover will bring new individuals into the libraries, and they will bring different experiences that may or may not be in accord with our efforts. Acculturation is essential, but so too is a willingness to revisit what we have done and change it over time.

It may be perceived that there is something intrinsically unsatisfying about the idea of creating an organizational attitude of constant "self checking" and assessment. It runs the risk of conveying the notion that we just cannot "get it right" and that we are constantly tinkering for no purpose other than for tinkering itself. Countering this sense is a vital part of COD and certainly

assessment plays an indispensable role in understanding how. The truth is that *not* tinkering constantly is a very risky way for an organization to be—risky because it leads to stasis and entropy. The organization, the system, simply winds slowly down and begins to evince the signs of atrophy that mean it cannot effectively do its job. Such a state may be comfortable for a time; indeed, it may be really the normal state of human affairs. But it is not a responsible way for us to work and makes long-term success impossible.

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Diversity and Organizational Culture Survey: Useful Methodological Tool or Pandora's Box?

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Abstract

During the past ten years a number of academic libraries have conducted surveys dealing with organizational culture (or climate) and diversity. Survey goals included gaining a better understanding of organizational culture, communication within the organization, work place attitudes and the climate for diversity. This paper describes the experience at the University of Washington Libraries which conducted its first diversity and organizational culture survey in 2004.

The survey was designed and conducted by the Diversity and Organizational Culture Task Force to help inform the development of a library diversity plan and provide an opportunity for library staff to evaluate a range of issues related to the work environment and communication. The Task Force reviewed relevant University of Washington documents and survey instruments created by other academic libraries, and ultimately decided to create a unique survey designed to encourage staff to provide substantial qualitative input.

Communication was the area with the lowest satisfaction, especially lateral and vertical communication. Survey results also showed that diversity is important to our staff, especially in supporting our diverse user communities. Libraries that are considering the application of organizational culture and diversity surveys should keep in mind that once staff are asked, they will expect follow-through on results. When the "box" is opened library administrators must be able to address staff concerns.

Introduction

During the past ten years a number of academic libraries have conducted surveys dealing with organizational culture (or climate) and diversity. Survey goals included gaining a better understanding of organizational culture, communication within the organization, work place attitudes and the climate for diversity. While these surveys have provided valuable information they

have tended to also heighten staff expectations that results will be used to improve the internal environment—"if they ask the question they must be prepared to act upon the results." This paper describes the experience at the University of Washington Libraries, which conducted its first diversity and organizational culture survey in 2004.

The University of Washington (UW) and the University Libraries have been committed to creating a diverse staff and student body for many years. However, with the passage of I-200 in Washington State in 1998 it became even more important to talk about diversity openly and honestly. I-200 prohibits the consideration of race, color, national origin, ethnicity and sex in admissions and employment decisions. The university community responded in a variety of ways, most notably with the Diversity Compact (October 2000), a formal pledge by key leaders to improve diversity on campus.

In 2000, the Director of Libraries requested a report on the state of diversity in the UW Libraries. This report, "Diversity in the UW Libraries: Recommendations for Strategic Action," recommended the establishment of a diversity committee and an "Outreach Librarian" to chair the committee and assist the Libraries in recruitment, retention and diversity training. Soon after this report was completed, the Libraries included diversity as a separate "Key Action Area" in its Strategic Plan 2001. Diversity had not been identified as an action area in previous plans.

"Respect for all human diversity is a fundamental value of the Libraries. Staff members who appreciate different backgrounds and perspectives provide us with a competitive advantage as we approach problem solving and planning for service. This appreciation also allows us to service our increasingly diverse communities more effectively and with more sensitivity.

In order to move towards our goal of developing a more diverse staff with greater appreciation of diversity, it is important that

we understand our overall organizational ways that are congruent with our values.”
*UW Libraries Strategic Plan 2001*¹

The road to addressing diversity within the Libraries has been a bumpy one with several failed attempts. A Diversity and Organizational Culture Task Force was formed in 2001, charged to conduct a survey to measure the Libraries’ climate with respect to diversity and organizational culture and create a diversity plan for the Libraries. The task force was reformed in 2002 to broaden the membership beyond those who had volunteered to serve on the original Task Force. This group organized a diversity forum in 2002, bringing in a consultant to lead discussions with Libraries personnel. Many staff participated in the forums and provided candid feedback. Utilizing the interest and enthusiasm created by the forum, the Task Force began designing a survey instrument. However, momentum waned before the instrument was completed.

Since 2000, the student body at the University of Washington has become increasingly diverse, with Asian American students increasing by 15.6%, African American students by 16.2% and Hispanic American students by 14.1%. Only the Native American student population has decreased since 2000, down, 0.7%.² Unfortunately, Libraries staff diversity has not increased at the same rate. Diversity of Libraries classified and professional staff has remained the same since 2000, at roughly 18%. In 2000 the Libraries had fifteen total minority librarians (11%), with thirteen Asian and two Black librarians. In 2005, the librarian minority population increased to twenty (13%) with the addition of four Asian librarians and one Hispanic librarian.³

In March of 2004, the Dean of University Libraries reconstituted the Diversity Task Force with new leadership and members. The Task Force included those with a strong commitment to diversity as well as staff who could stay on task and move the process forward. The charge to conduct a survey and write a diversity plan remained the same. The task force reviewed relevant University of Washington documents, including the Diversity Compact and mission statement, as well as notes from the 2002 library diversity forums. The idea of bringing in another consultant to reassess the current issues was considered. However, because library personnel had seen little follow-up to the forums, the task force made the decision to forge

ahead on the development of a survey. To do otherwise, it was feared, would give staff the impression that the Libraries was simply giving lip service to diversity.

The primary purpose of the survey was to help inform the development of a library diversity plan and provide an opportunity for staff to evaluate a range of issues related to the work environment and communication.

Literature Review

A search of the library literature for publications on climate and/or diversity assessments in academic libraries yielded few results despite the number of assessment efforts made across the country. The majority of articles argues for the necessity of assessment, but provide little documentation of actual assessment practices or results. Authors see ongoing assessment as a means to create dialogue about diversity and ensure that everyone within the organization shares a common stake in diversity and organizational culture issues. As James Williams correctly notes,

“The ultimate purpose of the climate assessment is to achieve buy-in on the diversity plan, while collecting organization-specific information and hosting an open dialogue (conflicted discourse) on diversity issues within the library organization.”⁴

Libraries at Penn State University,⁵ Duke University⁶, University of Virginia, University of Tennessee at Knoxville,⁷ University of Arizona, and University of Maryland have all conducted some type of survey in order to assess the environment for staff. Some institutions have provided access to the survey and results on their diversity committee Web sites while others mention that they have conducted surveys but do not post the results publicly. Others include mention of climate assessments in their goals statements or diversity plans.

What is surprising is that few articles have been published in the professional literature documenting an actual survey process and results. One institution which has published this information is the University of Maryland. Jane Williams presented on the University of Maryland Libraries’ climate assessment, “How to know if it’s real: Assessing diversity and organizational climate,” at the 2004 Diversity in Libraries Conference. The presentation included a brief description of their survey and the results, as well

as recommendations for others considering a similar endeavor. They have provided their full report online.⁸ Jane recently published an article titled "Assessing your library's diversity and organizational culture," inspired by her 2004 presentation. Because the UM Libraries have conducted two surveys, one in 2000 and the other in 2004, they are able to track changes and developments that have occurred between the two surveys.⁹

The University of Tennessee, Knoxville Libraries, which conducted a Diversity Climate Assessment in 2001, is another institution which has documented its experience with diversity assessment in the literature. Both the survey and results were posted for the participants on their Diversity Committee Web site in 2002. However, the results were not published until 2006 in an article in *portal* titled "Charting a Course for Diversity: An Experience in Climate Assessment."¹⁰ The authors believe the survey used by the UT Libraries had positive outcomes. Not only did the results better inform the Diversity Committee of the needs and concerns of the staff for planning purposes, but the entire process also brought diversity issues out into the open for people to talk about. The committee does intend to conduct another survey in the future. This article is a great resource for other academic libraries planning their own diversity and organizational culture assessments.

More institutions should publish the results of their climate or diversity surveys. Library literature has long been criticized for highlighting successes but rarely mentioning failures. There should be no fear of sharing unbecoming survey results when they are combined with plans for improvement and future action.

Survey Design/Methodology

The UW Libraries Task Force reviewed survey instruments created by other academic libraries. Instruments used by the University of Tennessee, Penn State and the University of Maryland were examples considered by the group. Ultimately, a decision was made to create a unique survey designed to encourage staff to provide substantial qualitative input, rather than have them respond to a long list of potential concerns. A small group of staff participated in a survey pretest. Only minor changes were made to the final instrument based on pretest feedback.

The final survey¹¹ consisted of thirty-three questions, seven of the questions being open-ended to allow for extensive comments. Most questions in the diversity and organizational culture sections required responses on a five point scale ranging from "excellent" to "poor," instead of the "agree" and "disagree" scales sometimes used by other surveys. A conscious decision was made to keep the number of questions relatively low in hopes of preventing survey fatigue. Survey questions were divided into three major sections:

- 1) Demographics
- 2) Diversity
- 3) Organizational culture

The task force determined it was important to maintain the anonymity of every participant. The University of Washington Libraries is a large organization, consisting of eighteen different branch libraries and many other divisions and departments. Some of the smaller branch libraries employ a staff of 2-3 people. Staff were not asked to identify where they worked within the organization. There was also concern some staff would not respond if they believed their responses could be traced back to them. For the purposes of this paper "staff" will be used to refer to all UW Libraries employees except for students. Libraries staff are comprised of four different job classifications: Classified Staff; Professional Staff; Provisional Librarians (untentured); and Permanent Librarians (tenured).

In August 2004, an e-mail invitation from the Dean of Libraries was sent to 381 librarians and staff who were invited to complete and submit the online survey. In recent years the Libraries have distributed most of their surveys electronically with positive results. The Diversity and Organizational Culture Survey was created using WebQ, a software program created on campus. Student workers were not invited to participate in the survey because the task force wanted to structure the questions in such a way as to elicit detailed response from permanent staff. Further, the survey was run in late summer when fewer students are employed. If a decision is made to survey students in the future it will likely be a separate instrument crafted specifically for them.

Demographics

The overall response rate was an acceptable 60.6%. However, as shown in Table 1, the response rate varied according to group.

Table 1: Respondents by Personnel Group

	Total Employees	# Respondents	% Respondents
Classified Staff	208	101	48.5
Professional Staff	28	25	89.2
Permanent Librarians	101	69	68.3
Provisional Librarians	42	34	80.9
Total	381	231	60.6

The demographic profile of respondents by age and gender were similar to the entire staff. It is interesting to note that only 43.7% of the librarians were fifty years or older, but that percentage rose to 70% among librarians with permanent status.

Table 2: Age of Respondents by Personnel Group

	% Under 30	% 30-39	% 40-49	% 50-59	% 60 and over
Classified	12.0	26.0	25.0	29.0	8.0
Professional	0	43.5	21.7	26.1	8.7
Lib—Perm	0	1.5	27.9	52.9	17.6
Lib—Prov	8.0	41.2	29.4	11.8	0
ALL	8.0	22.6	26.1	33.2	10.2

The final demographic question asked, “Do you consider yourself to be a member of an underrepresented group based on race, ethnicity or sexual orientation?” As Table 3 shows, less than 20% of all staff self-identified as members of one of these groups, with the highest percentage among librarians with provisional status.

Table 3: Percentage of respondents self-identified as from an underrepresented group

	Yes	No
Classified	19.8	80.2
Professional	12	88
Permanent Librarians	16.2	83.8
Provisional Librarians	30.3	69.7
ALL	19.3	80.7

Diversity

The Libraries does not have its own definition of diversity. For the purposes of the survey, the Task Force used the University of Washington’s broad definition:

“Diversity can include attention-sensitivity to race, gender, disability, class, sexual identity/orientation, religion, national origin,

age, ethnicity, culture, region/geography, indigenusness, language and ideology in hiring/retention practices or in service policies.”

Within this context, staff answered questions on diversity, both broadly and with respect to the user community. Survey results indicate that diversity is

important to our staff. More than 80% of respondents feel diversity is “very important” or “important,” and only 2.6% feel it is “not very” or “not at all” important.

Respondents were asked in Question #8 to choose from a list those diversity issues most important to themselves. The top three issues of greatest importance were: serving our diverse users; tolerance; and recruitment.

Table 4: Most important diversity issues within the Libraries

	Recruitment	Retention	Inclusion/Celebrating differences	Tolerance	Serving our diverse users
Classified	49.5%	45.5%	42.6%	74.3%	73.3%
Professional	52.0%	52.0%	36.0%	68.0%	88.0%
Lib—Perm	66.7%	58.0%	46.4%	65.2%	78.3%
Lib—Prov	67.6%	47.1%	58.8%	55.9%	94.1%
ALL	58.0%	50.6%	45.9%	68.4%	79.7%

Staff perceived that the Libraries could do a better job in addressing diversity issues, especially in recruiting and retaining a diverse work force. Despite the fact that more than 45% of respondents believe the Libraries’ performance in addressing diversity is excellent or good, just below 28% believe the Libraries’ performance in recruiting a diverse workforce is good. Only slightly more than 32% think the Libraries are doing excellent or good at retaining a diverse work force.

Survey results also showed that there was a need to better inform staff about diversity issues. Even though more than 66% of respondents believe the Libraries is excellent or good in its support of the needs of its diverse users, and 64% indicate their own preparedness to support the needs of the diverse users as excellent or good, survey comments indicate a need to develop staff training on working with diverse users, including disabled and non-native speakers.

While the questions with scaled responses yielded excellent information, the pages of comments provided invaluable insights into how the Libraries’ personnel think and feel. Staff were provided the opportunity to provide comment on two questions dealing with diversity:

#14) What areas of diversity does the UW Libraries need to give particular attention to?

#15) Do you have suggestions on how to foster diversity in the Libraries?

Responses to Question #14 mirrored those in Question #8 with the following issues mentioned most often: communication with a

racially/ethnically and culturally diverse staff; recruitment and retention of a diverse staff; and serving diverse users (language barriers and disabilities). Comments focusing on language addressed both serving users when there is a language barrier as well as the selection of non-English language materials for the collection:

“English as a second language—how do we help staff work with patrons where language is a barrier?”

“The retention and continual acquisition of materials in non-English languages is essential. While this is obviously going on at the moment, I feel that it may be at risk with declining budgets.”

Suggestions for fostering diversity, Question #15, focused on: improving communication to make everyone feel comfortable in the workplace; training staff to understand what diversity is and how to work with diverse colleagues and users; and recruitment and retention of a diverse staff. When asked what key issues, concerns or suggestions staff had with serving and supporting diversity in the user community (Question #18), the majority of staff identified the need for training in order to provide service and access to users with disabilities and to serve patrons when language barriers exist.

Organizational Culture

The goal of the Organizational Culture section of the survey was to solicit feedback regarding the work environment, physical spaces, and communication/interaction with colleagues and

supervisors. Communication was divided into two categories, internal and external. Internal communication, with a satisfaction rate of 70-75%, was defined as “communication within your workplace,” “relationships among staff in your work area”; and “communication with your supervisor.” External communication was defined as communication among areas in the library (laterally) and between work areas and library

administration. Less than half (47.6%) of respondents indicated Excellent/Good regarding “communication between different library areas (laterally).” Even fewer (36.6%) gave that high rating to “communication between library administration and your work area.” All communication ratings tended to be higher among Professional Staff and Permanent Librarians than among Classified Staff and Provisional Librarians.

Table 5: Communication between different library areas (laterally)

	Excellent	Good	Average	Fair	Poor	NA	Mean
Classified	6.9%	31.7%	30.7%	18.9%	11.9%	0%	3.03
Professional	4.0%	44.0%	28.0%	20.0%	4.0%	0%	3.24
Permanent Librarians	2.9%	36.2%	31.9%	23.2%	5.8%	0%	3.07
Provisional Librarians	0%	23.5%	29.4%	32.4%	11.8%	2.9%	2.67
ALL	4.3%	33.3%	30.3%	22.5%	9.1%	0.4%	3.01

Table 6: Communication between library administration and your area

	Excellent	Good	Average	Fair	Poor	NA	Mean
Classified	7.0%	26.0%	33.0%	13.0%	18.0%	3.0%	2.91
Professional	12.0%	44.0%	20.0%	8.0%	12.0%	4.0%	3.38
Lib—Perm	10.1%	27.5%	27.5%	15.9%	14.5%	4.3%	3.03
Lib—Prov	5.9%	23.5%	29.4%	29.4%	8.8%	2.9%	2.88
ALL	8.3%	28.3%	29.1%	16.1%	14.8%	3.5%	2.99

Almost 62% of all staff rated the relationships between librarians and classified/professional staff as Excellent/Good. However, this masks significant differences by personnel group. Only 54% of classified staff and 56% professional librarians rated the relationships as Excellent/Good, as opposed to 73.9% of tenured librarians.

Another group of survey questions focused on staff development and training. The majority of Libraries staff (67.9%) rated “Opportunities to participate in work-related activities outside your job” as Excellent/Good. 78% of all respondents rated training and development for their current position as Excellent/Good. 57.2% of all respondents rated training and development support for promotion and advancement as Excellent/Good. However, once again there were differences between personnel groups as only 42% of Classified Staff rated the opportunities Excellent/Good, compared to 75.4% of Tenured Librarians who did so.

Staff provided more than thirty pages of

comments on organizational culture, substantially more than they did on diversity. Many of those comments dealt with perceived inadequacies of communication within the organization and the lack of transparency in the decision making process.

“Mainly, a lack of communication or information not filtering down to lower level staff.”

“Communication across units and more communication from administration are areas that could be improved.

In an effort to ensure anonymity, individual’s comments regarding communication and organizational culture were kept private and shared only with the Libraries’ highest administrative body: Libraries Cabinet. Once the results dealing with organizational culture were analyzed, responsibility for organizational culture (including communication) was transferred to Libraries

Administration for their attention and response.

Presentation of Results

In December 2004, the Diversity and Organizational Culture Task Force, along with the Dean of Libraries, presented the results of the survey in two Town Hall meetings open to all Libraries staff. Each meeting drew about fifty people and those attending were provided copies of the results. The survey and results were also posted to the Task Force Web site. Following the presentation the Task Force and Dean fielded questions and listened to feedback. As was the case with survey responses, most in attendance had questions and comments regarding communication and organizational culture, not diversity. The Dean of Libraries announced that she and Libraries Cabinet, the primary administrative decision-making body, would take charge of addressing the issues raised regarding communication and organizational culture.

Outcomes

As charged, the Task Force used the survey results along with other information to create the Libraries Diversity Plan.¹² While the survey results did inform the committee of the specific areas of concern for staff, they also indicated the need for someone to take the lead in increasing staff awareness of the importance of diversity in our organization. Libraries Cabinet considered and formally accepted the plan in August of 2005. Plan goals, inspired by the survey, are as follows:

- To increase the diversity of the Libraries' workforce at all levels of the organization
- Promote an inclusive and supportive workplace culture as an important element in retaining a diverse staff
- To incorporate awareness of the value and importance of diversity at all levels of the Libraries so that staff recognize their responsibility in maintaining a culture supportive of and committed to diversity; provide a supportive and safe working and learning environment
- To enrich the quality of life and advance intellectual discovery by connecting people of diverse backgrounds and ethnicities with knowledge
- To create a standing Diversity Committee, reporting directly to the Dean of University Libraries

- To establish the position of the Diversity Officer

A Diversity Officer was appointed at half-time beginning January 2006, for a two year term, after which the success and impact of the position will be evaluated. A standing Diversity Advisory Committee was also appointed. The Diversity Officer and the Advisory Committee will assist in implementation, realization and subsequent renewal of the plan. Implementation of the plan's action items will also call on the support and commitment of middle-managers and all Libraries staff. Renewal will consist of assessment of the plan and implementation efforts, including, but not limited to, additional surveys.

In 1999, Reese and Hawkins wrote:

"Library management must first view diversity as a business issue that affects the library industry's ability to compete effectively; second, library management must view diversity as a top-down initiative that requires overhauls in the library's traditional culture; third, library management must create an environment that reflects this commitment."¹⁴

The plan is ambitious and requires the commitment and participation of staff at all levels of the organization, but its success is dependent upon the sustained support of upper management. These appointments clearly demonstrate that those in upper-management are making substantial commitments to diversity.

The Dean of Libraries and Libraries Cabinet did follow through on their commitment to address communication and organizational culture issues raised in the survey. These issues also were discussed during the Libraries Strategic Planning Retreat. In an effort to enhance communications throughout the organization, Cabinet sought the assistance of an outside consultant to examine communication within the Libraries and make recommendations on areas in need to improvement. The consultant submitted the Communication Enhancement Report in October 2005 based on information gleaned from focus groups, additional feedback, and evaluation. The Libraries launched the Communication Enhancement Initiative based on the report recommendations. Below are some of the efforts currently underway:

- 1) There is a desire for more transparency and understanding of decision-making processes. In

the past, Libraries Council meeting agenda and minutes were disseminated only to sitting members. Now the agenda and minutes are e-mailed to all staff with an open invitation to visitors. Council membership has also been expanded to include representatives from a broader array of library committees.

- 2) In an effort to establish shared communication norms and expectations, "Committee Communication Responsibility Guidelines" were issued for Chairs of interdepartmental committees and task forces. The purpose of the guidelines is to ensure the work of committees is consistently communicated to all staff.
- 3) Those efforts already mentioned above all increase communication within the organization. Additional efforts to increase lateral and horizontal communication include the creation of an interdepartmental Student Employee Supervisor Discussion group and online e-board discussion. Staff wanted to see groups created, bringing together people that do some of the same tasks as a way to building community, making connections and learning from each other. The discussion groups are led by a Steering Group of five who will meet four times a year. The first meeting was held in August 2006.
- 4) A new position was created to oversee the Communication Enhancement Initiative, the Organization Development and Training Officer. The Officer chairs a newly appointed Organization Development and Communications Advisory Group. The group is currently working on an improved staff Web interface, as well as recommended improvements designed to increase routine readership of the Libraries' online newsletters.

In addition, the University disseminated a workplace survey to faculty, staff and student employees in May 2005, known as the LCVI or Leadership, Community and Values Initiative. The purpose of the survey was to determine how employees felt about their workplace. The general results of the survey have been analyzed and posted on the Web,¹⁵ but access to results for specific organizational units will not be made without administrative requests. The Diversity and Organizational Task Force hopes to compare the results of the Libraries' survey with results from the LCVI when those results are available. It should be noted that the desire for transparency in decision-

making appears to be a common theme in both surveys.

Conclusions

Libraries considering the application of organizational culture and diversity surveys should keep in mind that, once staff are asked to spend time sharing their opinions and observations, they will expect disclosure and follow-through on results. When the "box" is opened library administrators must be prepared and able to address staff concerns. It is the author's position that libraries which document their climate assessment efforts as well as their plans for responding to the survey and improving the climate will not be seen as failures, but instead, as progressive institutions committed to their employees and community.

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Diversity and Organizational Culture Survey

Section 1. Demographics

Question 1. Gender

- ☐ Male
- ☐ Female

Question 2. How long have you worked in the UW Libraries?

- ☐ 0-3 Years
- ☐ 4-7 Years
- ☐ 8-15 Years
- ☐ 16 Years or more

Question 3. Are you

- ☐ Classified Staff
- ☐ Professional Staff
- ☐ Librarian with Permanent/Continuing Status
- ☐ Librarian with Provisional/Noncontinuing Status

Question 4. Do you have supervisory responsibilities (not students)?

- ☐ Yes
- ☐ No

Question 5. Age:

- ☐ Under 30
- ☐ 30-39
- ☐ 40-49
- ☐ 50-59
- ☐ 60 or older

Question 6. Do you consider yourself to be a member of an underrepresented group based on race, ethnicity or sexual orientation?

- ☐ Yes
- ☐ No

Section 2. Diversity

The purpose of this section is to solicit your opinions about issues related to diversity and how the UW and the Libraries have addressed them. Diversity can include attention/sensitivity to race, gender, disability, class, sexual identity/orientation, religion, national origin, age, ethnicity, culture, region/geography, indigenouness, language and ideology in hiring/retention practices or in service policies.

	Very Important	Important	Somewhat	Not Very	Not At All	NA
Question 7. How important is diversity in the Libraries to you?	☐	☐	☐	☐	☐	☐

Question 8. Which diversity issues within the Libraries are most important to you? Mark all that apply

- ☐ Recruitment
- ☐ Retention
- ☐ Inclusion/Celebrating our differences
- ☐ Tolerance
- ☐ Serving our diverse users

Question 9. Other? Please specify.



Please rate the following:

	Excellent	Good	Average	Fair	Poor	NA
Question 10. The UW's performance in addressing the issue of diversity	☐	☐	☐	☐	☐	☐
Question 11. The Libraries' performance in addressing the issue of diversity	☐	☐	☐	☐	☐	☐

Question 12. The Libraries' performance in recruiting a diverse work force



Question 13. The Libraries' performance in retaining a diverse work force



Question 14. What areas of diversity does the UW Libraries need to give particular attention to?

Question 15. Do you have suggestions on how to foster diversity in the Libraries?

User Community

Please rate the following:

	Excellent	Good	Average	Fair	Poor	NA
Question 16. Libraries' support						

Question 17. Your preparedness to support the needs of our diverse user community



Question 18. What are the key issues, concerns or suggestions you have with serving and/or supporting diversity in our user community

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Section 3. Organizational Culture

The purpose of this section is solicit your opinions about the Libraries' organizational culture, including your work environment, physical spaces, and communication/interaction with your colleagues and others with whom you come into contact on a regular basis.

Communication and Relationships

Please rate communication within the Libraries:

	Excellent	Good	Average	Fair	Poor	NA
Question 19. Within your work						

Question 20. With your supervisor

☐	☐	☐	☐	☐	☐

Question 21. Among areas in the library (laterally)

☐	☐	☐	☐	☐	☐

Question 22. Between library administration and your area

☐	☐	☐	☐	☐	☐

How would you characterize the following:

Excellent Good Average Fair Poor NA

Question 23. The relationships among staff in your work environment?

☐	☐	☐	☐	☐	☐

Question 24. The relationships between librarians and classified/professional staff?

☐	☐	☐	☐	☐	☐

Question 25. What are the key issues and/or concerns you have about communication and relationships within the Libraries? Please feel free to elaborate on responses above.

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Participation, Support and Advancement

Please rate the following:

	Excellent	Good	Average	Fair	Poor	NA
Question 26. Opportunity to participate in work related activities outside of your specific job assignment?	☐	☐	☐	☐	☐	☐

Question 27. Opportunity to get the training/development support needed for your current position?	☐	☐	☐	☐	☐	☐

Question 28. Opportunity to get the training/development support needed for promotion/advancement?	☐	☐	☐	☐	☐	☐

Question 29. Opportunity to secure travel funding?	☐	☐	☐	☐	☐	☐

Question 30. Opportunities for advancement/promotion in the Libraries?	☐	☐	☐	☐	☐	☐

	Excellent	Good	Average	Fair	Poor	NA
Question 31. Fairness of the promotion/advancement process in the libraries?	☐	☐	☐	☐	☐	☐

Question 32. What are the key issues and/or concerns you have with professional growth and development opportunities and promotion/advancement in the UW Libraries? Please feel free to elaborate on any of the questions asked above.

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Question 33. Do you have any additional issues or concerns relating to diversity or organizational culture you would like to share? Please do so here.

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Looking In and Looking Out: Assessing Our Readiness to Embrace the Future

Nancy Slight-Gibney

Director, Library Resource Management, University of Oregon Libraries, USA

Abstract

The University of Oregon [UO] Libraries Assessment Team conducted a diversity and organizational climate survey in May 2006. The goal was to gather staff perceptions regarding diversity issues, communication and job satisfaction; and to identify aspects of the organizational culture that enhance or detract from the Libraries' ability to transform nimbly and effectively as the environment changes. A major challenge was developing a set of questions that would focus the respondents' thinking in two directions: both inward (individual work-life) and outward (organizational effectiveness). Although the authors of the survey have identified some things they would do differently, the results were useful and have already generated a number of positive changes.

Introduction

In May 2006, The University of Oregon Libraries Assessment Team conducted a diversity and organizational climate survey of all permanent library employees. This came about as a recommendation from the site visit by Jim Self and Steve Hiller as part of the ARL program: "Making Library Assessment Work." The UO Libraries Assessment Team consists of Laura Willey (Circulation Manager), Andrea Coffman (Law Librarian), and myself.

Survey Design

Our team started by examining similar surveys conducted at the University of Virginia and University of Washington. After consulting with the UO Libraries Diversity Committee and working through several drafts, we held a productive discussion with Deb Carver, Philip H. Knight Dean of Libraries. As a result of that discussion, we broadened the goal for the survey to ask staff to look not just inward, at themselves and how they feel about working in the UO Libraries, but also to ask them to look outward and consider the

organization as a whole. We wanted to identify aspects of our organizational culture that enhance or detract from our ability to transform nimbly and effectively as our environment changes.

The major challenge in constructing the survey then became developing a set of questions that would focus the respondents' thinking in these two directions, both inward (individual work-life) and outward (organizational effectiveness). We started with this general question: "To what degree are staff able to creatively solve problems, suggest improvements, and manage themselves?" The underlying assumption is that this characterizes a flexible, change-ready organization. We added this question, and a few more, to our earlier draft and were happy with the results.

Then we had the fortunate opportunity to consult with Caleb Southworth, a sociology professor on our campus who teaches survey design. Professor Southworth's first suggestion was to break apart questions that include "and" or "or." This lengthened the survey quite a bit. (And in looking at the final version we still did not manage to get them all out!) His next critique was that we were trying to do too much. We modified and shortened the survey, eliminating as much as we thought we could, but in the end I think we still tried to do too much. There was value in combining questions about diversity, communication, organizational effectiveness, and job satisfaction into one survey—emphasizing by implication that these are all interrelated. But the diffuse focus was also a major weakness, as none of these objectives received as much attention as we needed to sufficiently probe the topic.

Another critique of our draft survey was the over-use of Likert scales. Professor Southworth's advice was that often the most revealing responses are those at each end of the scale. By eliminating the scale and shifting some of the questions to require "agree or disagree," we forced the respondents to choose between the extremes rather than shades of gray. This produced a good deal of discomfort and was a source of criticism from our staff. I do not

think there is one right answer on the question of when and how to use Likert scales, but it is one of the more interesting aspects of survey design.

One of the suggestions we failed to heed was to ask what people actually do rather than asking them about their attitudes. For example, "Do you attend all-staff meetings?" rather than "Do you think all-staff meetings are useful?" Respondents may answer the second question based on how they think they should answer rather than based on the reality of their actions. In retrospect, recasting the questions would have been a good idea and would have strengthened the survey.

The Assessment Team used SurveyMonkey.com to design and administer the survey and to tabulate the responses. All permanent staff (151) were invited and encouraged to take the survey; responses were anonymous. The team received human subjects clearance from our institutional review board so that we would be able to share the results. The final version of our survey with the summary results is included here as Appendix A.

Results

We left the survey open for just over two weeks. The numeric, quantitative results were made available to staff quickly after the close. The Assessment Team then spent quite a bit of time analyzing and summarizing the responses to the open-ended questions. It was a challenge to balance the quantitative information with the qualitative. The comments were generally more negative than the quantitative data. The Assessment Team created a summary of the qualitative data and discussed all the results with the Library Council, a twenty-member leadership group consisting mostly of department heads. Individual departments were then encouraged to examine the results and identify the most important issues and suggest follow-up actions. The Assessment Team, working with the Library Administration, the Library Diversity Committee and the Library Council, then developed a presentation for an all-staff meeting identifying the key issues and action items for each of the major components of the survey.

Response Rate, Demographics, and statistical analysis

Our response rate was great, 81% overall. Each subgroup (classified staff, librarians, and professional non-librarians) had over 75% respond. While we knew that sampling would be a better strategy for achieving generalizable results, we

thought it was more important to engage the entire staff in the conversation. With our high response rate we made a conscious decision to *assume* representativeness and moved forward with the analysis.

I conducted chi square tests to see if there were correlations between demographic characteristics and other responses. An obstacle to this was that there were quite a few low cell values for the observed frequency of some attributes. These were too small to use to determine statistical significance. The work-around was to collapse some of the values from the Likert scale: "excellent" and "good" became a single "positive" while "fair" and "poor" became "negative." I do not think this greatly alters the integrity of the data. The result was that we found only a couple of instances of statistically significant correlations. I will note these in the following discussion.

Diversity

The results show that as a group, we think recruitment and retention of a diverse work force are the biggest problems we face. We are not unique in this among academic libraries. What is interesting is that nearly 25% of our staff self-identified as a member of an under-represented group based on the broad definition of diversity employed on our campus. One would not guess this if we only looked at differences in appearance. Several staff members criticized the use of this broad definition, however it was not in our charge, nor was it in the charge of the UO Libraries Diversity Committee, to construct a new definition. Engaging in that process would surely have delayed the construction and implementation of the survey. A key take-away message was that 25% of us feel in some way different from our colleagues; we are not as homogeneous as we look. It was reassuring to note that there was no statistically significant difference in response to any of the questions in the survey based on diversity status. What we do not know if is this would have held true if we had used a narrower definition of diversity.

The UO Libraries Diversity Committee is developing a Strategic Action Plan over the course of this academic year. The survey results will feed into this process. In particular we know we need to think more creatively about recruiting. We also need to identify funds to help with retention. Several of the comments we received noted a deficiency in helping patrons with disabilities and

we will focus some training efforts there and well as with helping patrons for whom English is a second language.

Communication

This is an area where we assumed people would have the most complaints, as communication is always an issue in large organizations. It is simply not possible for any single individual to know everything that is going on throughout the library system, although some expressed a desire for this. We tried to elicit information about what channels of communication are particularly effective or ineffective. I think we did get some very useful information about it. In addition to quite a few comments about the value of face-to-face communication, there was a strong preference indicated for e-mail, although a significant number also commented about e-mail overload. To try and help with making more effective use of this tool without overloading people, the UO Libraries Systems Department will develop a training session on e-mail best practices.

Another strong preference was for the weekly e-mail *Staff Bulletin*. The knowledge that our staff actually read the *Bulletin* presents an opportunity to make greater use of this channel for broad dissemination of information. Library Web sites (both public and internal) and targeted e-mail lists were also rated highly as preferred communication tools. All-staff meetings were noted as useful—confirming what organizational development specialists advise about the value of face-to-face communication. The Library Administration has committed to increasing the number of these meetings.

Both lateral and vertical communication received low ratings (both had 57% indicating “fair” or “poor”). Many of the open-ended comments centered on how decisions were made or how decisions were communicated. It was a challenge to summarize these in a way that would provide constructive feedback. It was clear that Library Council members have a central role to play in both vertical and lateral communication. Some do this very well and some not so well. Each Council member has been charged to improve the consistency of the information flow. Leaders of committees, strategic initiatives, and ad hoc groups also have been given the responsibility to communicate more broadly either through regular postings to the *Staff Bulletin* or by reporting at all-staff meetings. To create more transparency in

decision-making, the Library Administration is now posting a column in the *Staff Bulletin* indicating what topics were discussed in their weekly meeting and what decisions were finalized. This simple measure has proven to be extremely popular and validates the commitment of the Library Administration to using the survey results to improve performance.

Organizational effectiveness

The results show a very high level of agreement with positive statements about the ability of each individual’s work unit to solve problems and self-manage. Respondents were less positive when thinking about the library as a whole. Forty-three percent disagreed with the statement, “We have access to sufficient tools and support to incorporate change in to work routines.” While this is less than half, it is still a large enough number to be an area of concern. This is one of the questions where there was a weak correlation ($p < .20$) with employment status. Librarians and professional staff mostly disagreed with the statement while classified staff mostly agreed with it. One might conclude that we do a better job of providing training and support to our classified staff than to our professionals. However, this is a question where we failed to take out the “and.” Is the problem with inadequate tools or with lack of technical or financial support? We do not know what people were thinking when they responded. The Assessment Team will be following up with small group meetings to try and get a better understanding of why people answered this question the way they did.

Listening to our patrons

In general, we think we do a good job of listening to our patrons. We looked closely at the answers we received to the question, “What have users told you about their expectations, experiences and needs that we have not yet acted on?” Interestingly, the areas for improvement our staff identified matched closely with our LibQUAL+® results although we had not yet made those results widely available. I think this confirms that we actually do listen well to what our patrons want.

We have instituted a number of changes to user services beginning with Fall Term 2006. Many of these were already in the planning stages when we conducted the survey, or are long-term projects such as strengthening our offerings of electronic resources, but a couple of changes came about

directly because of user needs voiced by our staff via the organizational climate survey.

Job satisfaction

There was a significant correlation ($p < .05$) with employment status and response to "Your work assignments as positive challenges to learn and grow." Seventy-five percent of the librarians and professional staff responded "excellent" or "good" to this statement. Only 54% of the classified staff responded positively to this question. This is another area where there is some ambiguity in interpreting the response. Is it that there is no challenge in the job or that the challenge is not seen as positive? The Assessment Team can explore this issue as we work with our Staff Development Committee to formulate a needs assessment for staff development and training.

Roughly two thirds of our respondents rated their level of job satisfaction as "excellent" or "good." Only 10% rated their overall job satisfaction as "poor" and only 5% indicated their level of enthusiasm for their work as "poor." These seem to us to be good numbers; however the problem is the lack of norms for comparison. I encourage the development of comparative data in this area. If we re-administer this survey in a couple of years, we will at least have some longitudinal information. In terms of developing action items to address job satisfaction, we believe this is an area that can only be addressed indirectly. Our assumption is that if improve communication, transparency in decision-making and staff development opportunities, then job satisfaction will improve.

What we learned about assessment

The Assessment Team learned quite a bit about survey design. We were able to construct a better survey as a result of the advice of our consultant, along with input from a number of stakeholders and pre-testers. We also learned from advice we did not take, such as asking about behaviors rather than attitudes. We learned a little about statistical analysis and know that we need to develop more expertise in this area. We learned a small team of three motivated people, working part-time on a project, could accomplish a lot.

As an organization we learned a lot about ourselves. We learned we are more diverse than it appears. We learned how we like to communicate and that we do a pretty good job of listening to our users. Did we get an answer to the question, to what degree are staff members able to creatively solve problems, suggest improvements, and manage themselves? Yes. The answer is to a very high degree—roughly 90% agreed with those statements. Did we identify aspects of our organizational culture that enhance or detract from our ability to transform nimbly and effectively as our environment changes? Somewhat. We identified some areas for improvement and some specific ways to make those improvements. A number of visible changes have already occurred and more will happen in the coming year, building trust in the assessment process. We also demonstrated the value of collecting data and then using that data for organizational improvement, steps along the path of building a culture of assessment.

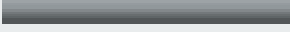
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University of Oregon Libraries Diversity and Organizational Climate Survey

Summary Results from May, 2006

1. Are you			
		Response Rate	Response Total
Classified staff		76%	66
Professional staff (unranked OA)		90%	19
Librarian (and other ranked faculty)		86%	37
Total Respondents			122
Total Response Rate (n=151)			81%

2. How long have you worked in the UO Libraries?		
		Response Total
0-5 years		42
6-10 years		28
11 or more years		52
Total Respondents		122
(skipped this question)		0

3. Do you consider yourself to be a member of an under represented group based on race, ethnicity, national origin, gender, sexual orientation, gender identity, economic class, political or religious affiliation, or disability?			
		Response Percent	Response Total
yes		24.3%	28
no		67%	77
not sure		8.7%	10
Total Respondents			115
(skipped this question)			7

4. Please rate the Libraries' performance on the following diversity issues:

	Excellent	Good	Fair	Poor	No opinion	Response Average
Recruiting a diverse workforce	5% (6)	31% (36)	36% (42)	15% (17)	13% (15)	2.69
Retaining a diverse workforce	5% (6)	28% (32)	33% (38)	22% (25)	13% (15)	2.81
Providing a safe, accepting and respectful work environment	25% (29)	47% (55)	19% (22)	6% (7)	3% (3)	2.06
Celebrating our differences	17% (19)	44% (51)	17% (19)	11% (13)	11% (13)	2.25
Serving our diverse users	16% (18)	47% (54)	23% (27)	3% (3)	12% (14)	2.15
Learning and developing skills to engage effectively in a culturally diverse community	14% (16)	45% (52)	27% (31)	7% (8)	8% (9)	2.29
Providing library resources that represent different points of view	28% (32)	45% (51)	14% (16)	4% (5)	9% (10)	1.94
Total Respondents						116
(skipped this question)						6

5. Please rate the following:

	Excellent	Good	Fair	Poor	No opinion	Response Average
Your own preparedness to support the needs of our diverse employees	16% (18)	56% (65)	22% (25)	3% (3)	4% (5)	2.12
Your own preparedness to support the needs of our diverse user community	14% (16)	50% (58)	28% (32)	3% (4)	5% (6)	2.22
Total Respondents						116
(skipped this question)						6

6. What are the key issues or concerns you have about diversity in the UO Libraries?

Total Respondents	55
(skipped this question)	67

7. How would you characterize the exchange of information:

	Excellent	Good	Fair	Poor	No opinion	Response Average
Across work units within the library	4% (5)	35% (40)	42% (48)	15% (17)	3% (3)	2.70
Between work units and Library Administration	3% (3)	35% (40)	35% (40)	22% (25)	4% (5)	2.81
Between the Libraries and other campus departments	1% (1)	37% (42)	28% (32)	12% (14)	21% (24)	2.66
Between Libraries and our primary users (students and faculty)	4% (5)	52% (58)	27% (30)	6% (7)	11% (12)	2.39
Total Respondents						114
(skipped this question)						8

8. Please rate your preference for methods of sharing information with colleagues within the Libraries:

	Strong preference for	Moderate preference for	Moderate preference against	Strong preference against	No opinion	Response Average
Printed materials	10% (11)	33% (38)	33% (38)	18% (20)	6% (7)	2.63
Telephone/voice mail	19% (22)	41% (46)	29% (33)	8% (9)	3% (3)	2.26
Email	72% (82)	25% (28)	3% (3)	1% (1)	0% (0)	1.32
Listserves	33% (38)	40% (46)	14% (16)	4% (4)	9% (10)	1.87
Library staff bulletin	40% (45)	48% (54)	6% (7)	2% (2)	4% (4)	1.69
Blogs	8% (9)	25% (29)	43% (49)	14% (16)	10% (11)	2.70
RSS feeds	5% (6)	14% (16)	25% (28)	8% (9)	48% (55)	2.68
Instant messaging	8% (9)	25% (28)	20% (22)	25% (28)	22% (25)	2.79
All staff meetings	24% (27)	49% (56)	18% (21)	6% (7)	3% (3)	2.07
Other meetings	9% (10)	56% (63)	21% (24)	9% (10)	5% (6)	2.32
Project management software, e. g. Basecamp, dotproject	13% (15)	16% (18)	11% (12)	6% (7)	54% (60)	2.21
Web sites (Iris, Libweb)	35% (39)	44% (50)	12% (13)	4% (4)	6% (7)	1.83

Total Respondents	114
(skipped this question)	8

9. What are the key issues or concerns you have about communication within the Libraries?

Total Respondents	55
(skipped this question)	67

10. Please characterize your work unit:

	Agree	Disagree	No opinion	Response Total
Staff in my work unit are usually able to creatively solve problems	89% (99)	8% (9)	3% (3)	111
Staff in my work unit are usually able to suggest improvements to services or procedures	90% (101)	5% (6)	4% (5)	112
Staff in my work unit usually can operate day-to-day without managerial involvement	93% (105)	4% (5)	3% (3)	113
Staff in my work unit usually work together in a positive and productive way	86% (96)	8% (9)	5% (6)	111
Total Respondents				113
(skipped this question)				9

11. Please characterize the Libraries as a whole:

	Agree	Disagree	No opinion	Response Total
Changes in our environment are tracked closely	42% (47)	29% (33)	29% (32)	112
We have access to sufficient tools and support to incorporate change into work routines	46% (52)	43% (48)	11% (12)	112
We receive appropriate information in a timely way that helps us do our jobs	59% (66)	29% (33)	12% (13)	112
Experimentation is supported	64% (72)	24% (27)	12% (14)	113
Input from staff regarding policies, decisions, procedures and other changes is encouraged	52% (59)	37% (42)	11% (12)	113
Input from patrons is encouraged	65% (73)	10% (11)	26% (29)	113
Total Respondents				113
(skipped this question)				9

12. What have users told you about their expectations, experiences and needs that we have not yet acted on?

Total Respondents	37
(skipped this question)	85

13. Please rate the following aspects of how you feel about your job:

	Excellent	Good	Fair	Poor	No opinion	Response Average
Your level of enthusiasm about your work	30% (34)	43% (49)	21% (24)	5% (6)	0% (0)	2.02
Your work assignments as positive challenges to learn and grow	27% (31)	36% (41)	27% (30)	9% (10)	1% (1)	2.17
Your overall job satisfaction	28% (31)	37% (41)	25% (28)	10% (11)	1% (1)	2.17
Total Respondents						113
(skipped this question)						9

14. Is there anything else you would like to tell us regarding the Libraries' ability to transform as our environment changes?

Total Respondents	34
(skipped this question)	88

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Diversity, Organizational Climate, and Organizational Culture: The Role They Play in Influencing Organizational Effectiveness

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Abstract

This paper addresses the question “What can organizations do to minimize the negative effects and maximize the positive benefits of workforce diversity?” It will discuss (1) the concepts of organizational climate and culture and the role that they play in effectively managing workforce diversity and (2) how workforce diversity is actually an organizational imperative in our rapidly changing environment. The paper will also show how diversity, organizational climate, organizational culture can combine to create what we, the authors, call the “healthy organization.” We hypothesize that healthy organizations can manage and empower its diverse human resources to enable the organization to achieve such important goals. Finally, this paper will show how we are beginning to test our healthy organization hypotheses in a library context.

Introduction

Today’s workforce is becoming increasingly diverse.¹ Women are entering the workforce and are pursuing more active careers than ever before. The average age of our workforce has increased as workers wait longer to retire. Finally, the ethnic diversity of our workforce has been increasing for some time. Before 1965, 76% of immigrants came from Europe. Since that time, the majority now come from Asia, Africa, the Caribbean, the Middle East, and Latin America. The Latino community is the fastest growing ethnic group in the United States.²

It is therefore not surprising that the composition of the workforce in the United States has changed. What are the organizational consequences of this increasingly diverse workforce? Clearly, diversity can have several positive influences on organizations. For example, applicant diversity provides organizations with an opportunity to hire employees with a diverse set of competencies, perspectives, and problem-solving skills. The increased diversity of employee skill sets

is believed to increase organizational flexibility to enable it to be more responsive to a dynamic and ever changing environment. Workers from diverse backgrounds should be able to more accurately anticipate and meet the demands of a changing and equally diverse clientele.³

Unfortunately, workforce diversity does not automatically result in positive outcomes. The reality is that increased diversity can lead to increased conflict among organizational employees. Differential expectations and unspoken assumptions can cause conflicts and misunderstandings. Further, human resources (HR) practices that have not been changed to reflect increased workforce diversity may also have unintended negative outcomes for minority subgroups⁴ and for the organization as a whole.

What can organizations do to minimize the negative effects and maximize the positive benefits of workforce diversity? We address this question in the present paper. Specifically, we discuss the concepts of organizational climate and culture and the role that they play in effectively managing workforce diversity. We discuss how workforce diversity is actually an organizational imperative in our rapidly changing environment. Finally, we show how diversity, organizational climate, organizational culture can combine to create what we call the “healthy organization.” We hypothesize that healthy organizations can manage and empower its diverse human resources to enable the organization to achieve such important goals, such as excellence in customer service. We finally show how we are starting to test our healthy organization hypotheses in a library context. However, before we can meaningfully discuss what a healthy organization is or how workforce diversity can be effectively managed, we must first define organizational climate and organizational culture.

Organizational Climate/Culture

Organizational climate describes “how” things are done in an organization. It is the employees’ shared

perceptions of the themes, goals, or imperatives that describe their workplace.⁵ The implication of employees shared perceptions of the important imperatives for their organization is that it clarifies everyone's understandings of what behavior is expected, what behavior will be rewarded, and what behavior is supported at work.⁶ What causes employees to develop a shared understanding of their organization's imperatives? The main determinants are believed to be the policies, practices, and procedures implemented in the organization.⁷

Early climate researchers measured employees' impressions of their overall organizational climate. That is, they measured employees' perceptions regarding various aspects of their work itself, their coworkers, the organizational reward system, and employee motivation.⁸ This particular approach to measuring climate did not prove to be useful when trying to understand organizational outcomes. However, in the 1990s, researchers started to fine-tune their measures of climate so that rather than asking general questions about the organizational climate, researchers started writing their climate surveys focusing on the extent to which organizational policies, practices, and procedures facilitate the attainment of particular organizational imperatives. These imperatives have been things like organizational climates for safety,⁹ innovation,¹⁰ justice,¹¹ ethics,¹² customer service,¹³ to name a few. Measuring climate in this way proved to be very useful when trying to predict whether employees will exhibit the corresponding behavior. For example, Schneider, White and Paul found that customers report better service in those units that employees have indicated has policies, practices, and procedures geared toward facilitating good customer service.¹⁴ Other research has found that the frequency of unsafe behaviors,¹⁵ the actual injury rates¹⁶ and the number of actual accidents¹⁷ among employees decreases in organizations with strong safety climates. Clearly, organizational climate has to be measured so employees can clearly indicate which organizational themes, goals, or imperatives are being emphasized by the organization's policies, practices, and procedures. Luckily, there is no limit to these potential imperatives that can be measured in an organizational climate survey.

While organizational climate refers to "how" things are done, organizational culture refers to "why" things are done.¹⁸ It is the shared meaning that employees use to make sense of what happens

in an organization. Employees may refer to organizational values to explain why certain policies or procedures are implemented (e.g., training is made available to everyone in this organization because the person who founded this organization was an academic and she placed a high value on individual learning). Employees may point to certain artifacts and provide explanations or stories to account for certain behaviors in the organization (e.g., the United States Naval Academy's seal and what it stands for; the Tecumseh statue and its significance for midshipmen at the United States Naval Academy). Finally, culture also reflects the underlying assumptions, beliefs, and philosophies that yield meaning for people regarding why certain behaviors occur.¹⁹

Culture ranges from those aspects that are more tangible to those that are less so.²⁰ The most tangible aspects of organizational culture are organization's "artifacts." This physical aspects of the work environment²¹ includes things like the *physical layout* of the workplace (e.g., cubicles versus separate offices), the *language/terms commonly used* in the workplace (e.g., use of jargon/slang, slogans, gestures), and the *narratives* (e.g., stories, legends) that accompany these more tangible cultural artifacts.²² One must be careful when interpreting artifacts. Their meaning can be easily misinterpreted because they only hint at the nature of the organization's culture.²³

Culture is also reflected in the values of the organization. Values are desirable goals that people use as guiding principles in their lives.²⁴ Examples of values are things like the importance of wealth, power, freedom, security, loyalty, or social justice.²⁵ Espoused values are official managerial statements of the values of the organization.²⁶ Enacted values, on the other hand, refer to the underlying values that are perceived by employees to actually be really determining behavior in the organization.²⁷ Inconsistencies between espoused values and enacted values can increase cynicism among employees²⁸ and we hypothesize can also decrease perceptions of organizational fairness as well as decrease positive employee attitudes/behavior (e.g., job satisfaction, organizational commitment, prosocial behavior), and increase negative attitudes/behaviors (e.g., increased turnover intentions, increased employee conflict, lower customer service).

Finally, culture is also evident in the underlying assumptions, beliefs, and philosophies of

organizational employees. Examples of cultural assumptions, beliefs, and philosophies are things like beliefs about the inherent goodness/badness of human nature,²⁹ having a doing-orientation (e.g., nature can be controlled) versus being-orientation (e.g., nature is powerful and humans are subservient to it), or beliefs about the nature of reality and truth (e.g., modernist—objective reality versus postmodernist—social construction perspectives on truth).³⁰ This aspect of culture is so well ingrained in people that they may not even be aware that they hold these assumptions, beliefs, and philosophies. However, even though people may not be aware of these things, their behavior is affected by them.³¹ This is the least tangible portion of culture and as such, it is the hardest to assess.³²

In summary, organizational climate concerns *what* gets done in an organization and is built around people's shared perceptions of the organizational imperatives. Organizational culture, on the other hand, explains *why* things are done in that organization. Some aspects of culture (i.e., values and artifacts) are more easily shared than other aspects (e.g., assumptions, beliefs, philosophies). A key result documented by organizational scientists is that, for the most part, employees tend to moderate their behavior so that it is consistent with the organizational climate and culture. Indeed, both climate and culture have a profound effect on employee behavior and both of these organizational phenomena can determine the extent to which organizations achieve their goals.

Given the central role of organizational climate and culture in affecting employee behavior, a logical next step is to ask "where do these climate and culture perspectives come from?" We address this issue next.

Antecedents of Organizational Culture/Climate: Founding Conditions

Clearly climate and culture do not emerge randomly. Organizational climate is believed to be initially influenced by the founding conditions of an organization.³³ Leader and upper management beliefs, interests, personality and values are considered critical factors in creating a new organization's climate.³⁴ Specifically, the values and assumptions of an organization's founding leaders directly influence the type of practices, policies, and procedures implemented in their organization. For example, leaders holding the implicit cultural assumption that humans are basically evil will probably implement restrictive and controlling

policies and practices. On the other hand, leaders that hold assumptions that human nature is basically good will probably implement policies and procedures that involve less direct supervision of employees. Thus, the values and assumptions of founding leaders cause them to implement organizational policies, practices, and procedures consistent with these values and assumptions. It is these policies, practices, and procedures that influence employees' perception of organizational climate.

Of course, there are certain realities within which the founding leader's influence on organizational policies, practices, and procedures is constrained. For example, the nature of the work itself influences the types of practices that can be implemented. Organizations in the finance industry tend to have more formal and rigid policies, practices, and procedures than the telecommunications or food-services industry due to the kinds of material being exchanged and produced in these different industries.³⁵ Also, once the organization starts to become successful, more employees are hired and the structure of the organization changes to accommodate this growth. The tendency for an organization that is growing is to become more hierarchical in structure. New policies, practices, and procedures have to be implemented to efficiently manage this larger organization.³⁶

In summary, the beliefs, characteristics, values, and assumptions of founding leader affects the practices, policies, and procedures implemented in an organization within the constraints of such factors as the work itself and structure of the organization. Employees attempt to make sense of their organizational environment and the meaning that they generate is referred to as organizational climate. With this understanding of the role of the founding conditions for creating organizational climate, we turn to the questions of how organizational culture emerges and how climate and culture are perpetuated over time.

Antecedents to Organizational Culture/Climate: The ASA Model

According to Schneider's³⁷ Attraction-Selection-Attrition (ASA) model, organizational climate affects the kinds of people that are attracted to, selected into, and remain in a given organization. The ASA model predicts that people are attracted to an organization based on their perceived fit between their personal beliefs, competencies,

values, and other characteristics and organizations' characteristics (i.e., organizational goals/imperatives and organizational climate). Of the people that applied for employment, the organization uses some systematic assessment procedure to non-randomly identify people who have the needed competencies for a job and who share similar values/ characteristics as the organization. Despite the fact that people apply for jobs non-randomly and that organizations non-randomly select people from their applicant pool, mis-matches and misfits can and do happen. Once immersed in an organization, some employees discover that they made a mistake by joining the organization and they voluntarily leave. Another possibility is that the organization discovers that it made a mistake and the misfit individuals' employment is terminated. As a result of employees leaving the organization, job openings occur and the entire ASA cycle starts again.

This ASA cycle has a number of organizational implications, some good and some bad. On the positive side, the result of the ASA cycle is that the beliefs, values, interests, and other characteristics of the employees remaining with an organization become increasingly similar over time. As people become more similar in their values, beliefs, and assumptions, they are more likely to use similar explanations to account for events in their organization. Thus, the Schneider ASA model accounts for the solidification, propagation, and refinement of organizational culture. Indeed, over repeated ASA cycles, the remaining employees become increasingly similar to one another and organizational culture becomes increasingly shared and its influence on moderating people's behavior is increased. In other words, the more homogenous the employees are, the stronger the organizational culture. This implies that if the organizational policies, practices, and procedures were strategically designed to send consistent messages about organizational imperatives (e.g., customer service is critical or work safety is critical), then employees who share values and other characteristics consistent with those imperatives will be attracted to, selected by, and remain with the organization. As a result, the organization's culture will eventually be consistent with the desired organizational imperative and thus, employees will act and explain environmental events in ways consistent with that imperative.

Another positive aspect of the ASA model is that it also accounts for the propagation and refinement

of organizational climate over time. As the employees who remain with the organization rise through managerial ranks, they will eventually have the power to change or develop new organizational policies, practices, and procedures. Similar to how founding leaders initially developed organizational climate, these new managers will draw upon their beliefs, assumptions, and personal characteristics when choosing or refining organizational procedures.

While the Schneider³⁸ ASA model highlights the positive aspects of this growing homogeneity of the workforce, it also highlights a potential downside as well. Schneider³⁹ explicitly pointed out that a negative consequence of the ASA cycle is that it can lead to organizational demise. If the organizational culture and climate becomes too strong, employees become too similar. The homogenization of employee beliefs, attitudes, values, and assumptions results in a reduced sensitivity to organizational environmental demands (e.g., introduction of competitors in the market, shifts in customer needs/desires) and a reduced capacity for creativity and flexibility in the organization's behavioral repertoire. As a result, the organization may miss or deliberately ignore rising threats in their environment. Once the organization is forced to become aware of these environmental threats, it may not have the behavioral flexibility to respond to them. An example of an organization that ignored shifts in its environment and lacked behavioral flexibility to efficiently respond once managers finally were forced to recognize these shifts is the Ford Motor Company in the United States. Schneider predicts that unless some intervention to increase diversity of ideas, values, beliefs, interests, competencies and other characteristics among employees is undertaken, organizations suffering from a calcification of ideas will die.⁴⁰

Overall, the predictions of the ASA model has received empirical support.⁴¹ We believe that this model provides a sound and concise explanation of how climate and culture are developed and endure over time. We further believe that this model has several practical implications that managers from all organizations need to be aware of.

First, the model makes diversity a central organizational imperative. Managers can no longer discount the necessity of diversity. They can no longer dismiss it as political correctness. Rather, the ASA model highlights diversity as an imperative for the long term health of any organization.

Clearly, homogenization of employees will occur and indeed, need to occur for sufficient levels of organizational climate and culture to be created. However, managers need to carefully evaluate whether their organizational policies, practices, and procedures are sending consistent and appropriate messages to their employees. Managers need to ask themselves whether: a) the multiple messages being sent about desired organizational goals are consistent with one another?; b) the messages about desired organizational goals are sufficiently strong to accurately be heard by employees?; and c) the policies, practices, and procedures of the organization inappropriately restrict diversity? It may seem almost impossible for an organization to simultaneously build an appropriately strong culture and climate while allowing diversity to persist. However, it can be done. Managers need to thoughtfully differentiate among beliefs, values, and personal characteristics that are critical for accomplishing organizational and job goals (e.g., job knowledge, service oriented personality) from beliefs, values, and personal characteristics (e.g., culture, race, gender, ethnic background, sexual orientation) in which diversity should be allowed to flourish.

It should be noted, however, that while the ASA model has received empirical support, there is another mechanism by which shared meaning among members of an organization is created: socialization.

Antecedents to Organizational Culture/Climate: Socialization

Socialization focuses on the learning process and on how people acquire knowledge about organizational culture.⁴² Culture can be formally taught through training programs. However, it doesn't have to be. Both mentoring and informal training provided by friends and colleagues at work are powerful ways by which culture can be learned. Indeed, one theory in the organizational sciences, the symbolic interactionist approach⁴³ has primarily focused on these interactions among employees to explain the emergence of cultures.⁴⁴ Organizational employees come to understand what the policies, practices, and procedures really mean in their day-to-day life. They learn which established organizational policies need to be adhered to or can be ignored. A recent study in a classroom setting validates that students' interactions with each other contribute to their shared understanding of classroom events.⁴⁵

Illustration: Organizational Climate for Service

With this understanding of what organizational climate and culture are and how they affect behavior and are influenced by behavior, we can address the question "what relevance do these constructs have for the issues faced by libraries today?" We hope the reader will agree that the answer is "quite a lot."

For example, one big issue today in libraries throughout the United States is how to improve and maintain customer service. There is solid evidence that customer service can be affected by the climate and culture of organizations. Parkington and Schneider,⁴⁶ for example, found that bank branch customers had low opinions of the service quality that they received in the same branches in which tellers indicate that there is a discrepancy between their own values and management's values regarding customer service. Further, bank tellers from branches with greater perceived value discrepancies reported lower job satisfaction, higher turnover intentions, and higher levels of frustration than tellers in other bank branches.

Schneider, Parkington, and Buxton⁴⁷ reported that employee perceptions of organizational practices, policies, and procedures were related to customer service ratings. Specifically, they found that employee perceptions of their manager's emphasis on service were related to customer's reports of how well the branch seemed to be run and to overall service quality. Indeed, managers may have to project an image of being passionate about service to clearly send the signal to employees regarding the import of this goal.⁴⁸

Finally, Schneider and Bowen⁴⁹ also found that customer service ratings were directly related to employee perceptions of organizational practices, policies, and procedures. In particular, customer service quality ratings were consistently rated to employees' ratings of the extent to which the organizations policies, practices, and procedures facilitated the accomplishment of their work.

Taken together, these studies demonstrate the powerful effects of climate on customer service outcomes. When customer service becomes an organizational imperative, employees react appropriately and customers indicate that they receive better service. Clearly, library systems can also improve their customer service perceptions by consciously thinking about their policies, practices, and procedures. Library administrators need to

explore whether appropriate messages are being transmitted to their employees. They need to explore whether inconsistent messages are being communicated (e.g., management says customer service is critical but employees are really only rewarded for efficiency). Administrators have to understand how staff interprets what happens in their library.

While this discussion illustrates how climate and culture can emphasize organizational imperatives so that desired outcomes are obtained, it does not illustrate how companies effectively counteract the forces driving toward workforce homogeneity and organizational death. We believe that counter forces are generated when organizations operate in a fashion that we refer to as the healthy organization. We discuss this next.

The Healthy Organization: Balancing Workforce Homogeneity and Diversity

As indicated previously, organizations must find ways by which a healthy level of workforce diversity is maintained. The organization must remain responsive to its environment. This requires not only anticipating certain environmental changes by a workforce with sufficient differences in perspectives to interpret signals from the environment but also by continual updating of employees competencies to maintain organizational behavioral flexibility over time. This implies that organizations have to address issues of workforce diversity, employee fairness, harassment, and skill enhancement seriously. We label an organization that effectively deals with these issues healthy.

A *healthy organization* can be defined as an organization in which employees feel empowered. It is one in which employees believe that management values them and treats them fairly. It is an organization in which the policies, practices, and procedures are administered consistently and these practices work in concert to facilitate the attainment of one or more organizational goals (e.g., productivity, efficiency, safety). Finally, it is an organization in which the connection with its environment is not forgotten and the importance of employee to maintain and update their competencies is stressed. In other words, the healthy organization is said to have a climate for teamwork, a climate for diversity, a climate for fairness, and a climate for continual learning.

We hypothesize that the healthy organization sends two kinds of complimentary messages to their employees (i.e., concern for employees and

concern for customers). The "concern for employees" message is sent when organizational practices, policies, and procedures strongly indicate that things like teamwork, diversity, and justice are valued. The "concern for customers" message is created when the organizational practices, policies, and procedures strongly indicate that customers are valued and meeting their needs is essential. Organizations appear to value their customers when they do such things as restructure the work environment to improve customer service and/or offer training and other resources to improve employee customer-related skills and knowledge. When both of these messages are communicated, forces pushing toward overly restrictive workforce homogeneity are mitigated. The climate for diversity should operate to attract and keep employees from diverse backgrounds. The climate for fairness should reduce employee cynicism (because procedural consistency should reduce discrepancies between endorsed and enacted values) and enhance the probability that productive cultural interpretations of organizational events are adopted. Finally, the climate for continual learning should enhance responsiveness to the environment by enhancing the diversity of the competencies in the organization's workforce. We believe that a healthy organization should have demonstrable advantages over less healthy organizations with respect to both employees' and customers' perceptions, relations and satisfaction.

Unfortunately, while the healthy organization makes sense from the aforementioned ASA model and the socialization processes, no empirical study to date has tested all of its propositions. However, a seven year joint collaboration between the University of Maryland (UM) Libraries, the UM Industrial/Organizational (I/O) Psychology program is starting to rectify this issue.

Organizational Climate and Diversity Assessment (OCDA) Research Initiative

Starting in 1999, the UM Libraries partnered with the UM I/O Psychology program to develop an assessment of the climate and culture in the UM libraries. Specifically, the UM libraries were concerned with issues such as diversity, fairness, and team work.

The I/O Psychology team started its analysis by conducting a number of focus groups with library staff, librarians, and administration to identify both positive and negative impressions of the UM library policies, practices, and procedures.⁵⁰

Information about “what gets done” (i.e., climate) in the library as well as impressions of “why it gets done” (i.e., culture) were collected. Based upon their understanding of the library’s organizational goals, the issues identified from the focus groups, and the prior climate/culture research literature, they developed and administered the first version of the Organizational Climate and Diversity Assessment (OCDA) survey to the UM libraries employees. A majority of university employees were surveyed and the results were feedback to all the UM library stakeholders (i.e., staff, librarians, and administration). Several organizational interventions to resolve issues identified by the feedback were attempted. For example, a new organizational position—Coordinator of Personnel Programs—was developed, new training programs for supervisors were implemented, and a new emphasis on teamwork was initiated.

In 2004, the UM Libraries’ once again partnered with the UM I/O Psychology program to provide an updated “snapshot” of the UM libraries climate and culture was undertaken.⁵¹ Similar in methodology to the previous survey, the I/O psychology project team developed a second version of the OCDA survey. This version added additional healthy organization concepts (e.g., climate for fair interpersonal treatment) as well as include additional questions about managerial practices and policies. Once again, a majority of employees completed the survey. The analyses revealed that a number of positive changes had occurred over the four year interval between the two surveys. Specifically, there were statistically significant improvements in the extent to which library employees’ believed that a) the UM Libraries supported diversity, b) that employees were kept well-informed regarding organizational issues, c) that the UM Libraries had non-discriminatory practices, and that d) that UM library employees were treated fairly.

In summary, this work with the UM libraries not only identified the dimensions of climate and culture important for a healthy organization in a library setting but also provided proof that feedback from the OCDA survey, when taken seriously, can have practical organizational level benefits. Namely, the UM libraries used this feedback to strategically identify and implement interventions that were later found to have empirically improved their work environment.

While this work demonstrates the utility of measuring and providing feedback regarding

climate and culture in a library context, it does not provide evidence regarding the organizational consequences of a healthy organization. However, a joint venture with the University of Maryland (UM) Libraries, the UM Industrial/Organizational (I/O) Psychology program and the Association of Research Libraries (ARL) seeks to empirically validate this last prediction.

Specifically, this new initiative started in 2007 and involves an attempt to test the generalizability of the UM OCDA library survey to other research institutions (i.e., Texas A&M University, University of Arizona, University of Connecticut, University of Iowa; and University of Kansas). Once the procedural issues have been resolved, the survey has been shown to be generalizable to other institutions, and meaningful feedback reports have been developed, we will then invite other libraries from research universities throughout the United States to participate in our study. The goal of this project is to test the healthy organization propositions outlined previously and to empirical validate the hypothesis that a healthy organization provides better customer service than do less healthy organizations.

Conclusion

We started our discussion by noting that the changing nature of the American workforce. In particular, the increased diversity of today’s workforce and consumer base necessitates greater organizational scrutiny regarding diversity-related policies, practices, and procedures. Diversity issues can not be discounted but need to be seen as the organizational survival mechanism that they are. While increasing diversity in organizations could result in problematic conflicts in the short-run, effective management of these conflicts and socialization of employees could catapult the organization beyond its competitors.

What can an organization do to maximize the positive outcomes associated with diversity while simultaneously minimizing the negative outcomes? First, the climate and culture of an organization needs to be evaluated. Are consistent messages being sent to employees or are the organizational policies, practices, and procedures sending inconsistent messages. Do the organizational climate and culture remind employees about the importance of various organizational goals? Is the attainment of important organizational goals facilitated or inhibited by organizational practices?

Second, workforce diversity has to be recognized as an organizational imperative in a dynamic and changing environment. While homogeneity on certain characteristics is necessary to build effective climates and cultures, managers need to identify the values, beliefs, assumptions, and background experiences for which diversity can exist. Finally, administrators have to evaluate the extent to which their organization is healthy. Does the organization have a climate for diversity? Are employees empowered because the organization has a climate for teamwork? Do people feel that the policies, practices, and procedures are fairly administered? Are the competencies of employees constantly being updated because of an organizational climate for continual learning? If the answers to these questions are yes, it is believed that organization can be considered healthy because its sensitivity to and behavioral flexibility with regard to the environment will remain over time.

Clearly, more research is needed to validate these healthy organization propositions in a library setting. The OCDA initiative project is an excellent starting point for testing these propositions.

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Assessing Organizational Culture: Moving towards Organizational Change and Renewal

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Abstract

This paper presents a method for assessing a library's organizational culture. Culture plays a critical role in creating a work environment where employees are committed and contribute to the success of the organization. A research project was conducted at the University of Saskatchewan Library to examine the ways in which the library's culture influences the work of library staff and the effectiveness of the library.

Phase 1 of the study focused on librarians and described the current cultural environment of the library: identified subcultures that exist; examined the congruence between subculture(s) and overall organizational culture; discussed those aspects of the culture(s) that impede or facilitate the work performance of librarians; and described the extent to which librarians, both new and established, are able to participate, influence and affect change. Phase 2 extended the study to include the perceptions of organizational culture, both existing and desired, of all other library staff to provide a complete picture of the library's organizational culture.

The research study was conducted using the Competing Values Framework (CVF), which has been used extensively in research studies to examine the impact of culture on organizational issues. Their Organizational Culture Assessment Instrument (OCAI) assesses key dimensions of organizational culture and provides a picture of the fundamental assumptions on which an organization operates and the values that characterize it.

In the U of S study the CVF was used to: (1) identify the various cultures that exist; (2) assess the impact of organizational culture and sub-cultures, on the work environment and the progress and success of librarians; (3) examine the impact of culture on organizational issues such as attracting,

developing and retaining librarians; examine the organizational culture from the perspective of all library staff, again identifying sub-cultures, congruencies, disconnections and similarities among a variety of formal and informal groupings. Finally, it contributed to the development of recommendations concerning transforming the current culture into a desired new culture, introducing changes to the organizational structure, leadership and management initiatives and new support mechanisms that facilitate a positive, creative and rewarding working environment for library staff.

Introduction

This paper presents a method for assessing a library's organizational culture. It explores the application of Cameron and Quinn's¹ Competing Values Framework (CVF) in an academic library setting. The framework provides a tool for understanding the current organizational culture and a map for moving to organizational change and renewal. The framework and the associated Organizational Culture Assessment Instrument (OCAI) are discussed in the context of a case study conducted at the University of Saskatchewan (U of S) Library which examined the ways in which the library's culture influences the work of library staff and the effectiveness of the library. The study employed the CVF to describe the dominant current and preferred organizational cultures and to identify the existence of subcultures. This methodology was augmented with additional questions and structured interviews in order to explore in-depth some of the particular factors that facilitate or impede librarian and organizational success.

What is Organizational Culture?

The concept of organizational culture has been

much discussed and debated in business management and organizational development literature. Concepts, theories and definitions of organizational culture from a range of disciplines have been employed by scholars in an effort to better understand the complexity of culture and its central role in how we function in groups and the success of organizations. Considering the work of Schein² and others³ we have broadly defined organizational culture as a collective understanding, a shared and integrated set of perceptions, memories, values, attitudes and definitions that have been learned over time and which determine expectations of behavior that are taught to new members in their socialization into the organization. In its most positive sense, culture plays a critical role in creating a work environment where employees are committed and contribute to the success of the organization. Culture creates stability and creates a sense of cohesion.⁴

Why Examine Organizational Culture?

Our research explores how the organizational culture of the library gives identity, provides collective commitment, builds social system stability and allows people to make sense of the organization.⁵ It also considers the acculturation process exploring how librarians (tenured and pretenured) assimilate and/or influence the culture, values and perspectives of the library.⁶ Understanding organizational culture is a necessary first step to thinking about and discussing organizational change, renewal and improvement. Change in organizations involves changes to fundamental perceptions, beliefs, patterns of behavior and norms, and ways of sense-making that have developed over long periods of time. Plans for change must be carefully integrated into the existing culture, recognizing the potential points of resistance and finding opportunities to build on existing strengths. While Schein⁷ notes that it is creating and changing culture that distinguishes leadership from the activities of management, it is a clear understanding of current and future priorities and the participation of the entire organization that ensure that the changes are successful.

Our Research in Context

Our interest in research into organizational culture began at the time when the University of Saskatchewan Library was experiencing significant change with fifteen of its thirty-eight librarians

“new” to the organization, having commenced work at the Library within the past five years. Addressing their needs became a major and an immediate management responsibility. At the same time the Library appointed a new Dean, who upon arrival initiated a strategic planning process for the Library. It was our intent that our research would help inform this institutional planning and contribute to the development of organizational changes and supports that facilitate a positive, creative, and rewarding working environment.

The circumstances which prompted our research interest are not unique to the University of Saskatchewan Library. Many Canadian libraries are beginning to experience rejuvenation in human resources. A Canadian Association of Research Libraries response to the *8Rs Canadian Library Human Resources Study: The Future of Human Resources in Canadian Libraries*,⁸ estimated the retirement rates in the academic sector to reach 43% by 2014, a concomitant loss of professional staff in management positions, and an increased need to hire new librarians.⁹

While we have long recognized the external pressures driving the change in libraries, we are now experiencing changes from within as well. A changing workforce influences the direction and shape of existing organizations. This is particularly the case when mature and stable organizations, like the University of Saskatchewan Library and many academic libraries, are faced with an influx of new staff. Understanding organizational culture is a first step in reshaping organizations for effectiveness and organizational success.

The Literature on Organizational Culture

The volume of research which uses organizational culture to understand the social meaning, structure, and effectiveness of organizations is immense. The business and management literature in particular includes a considerable amount of research which addresses the importance of understanding organizational culture in order for change to be implemented, managed, and integrated so that organizations of all types can function successfully. Each professional discipline also has its own body of literature that includes discussion of the importance of organizational culture. Given the diversity of the organizational culture literature, we will limit our discussion to the literature dealing with the Competing Values Framework methodology.

Since their development in the early 1980's,¹⁰ the

Competing Values Framework and the Organizational Culture Assessment Instrument¹¹ have been used extensively to examine organizational culture in a variety of settings. This has included organizational change in large industrial firms such as Ford Motor Company,¹² the relationship between organizational culture characteristics and the quality of worklife in health care settings,¹³ and the cultural characteristics of industries in Qatar to determine the viability of implementing TQM in those settings.¹⁴

The CVF has been used to help identify the needed areas of change within organizations, and to manage the change process. It has been used as the basis for creating a comprehensive manager training program and to determine job satisfaction and engagement,¹⁵ to examine characteristics of learning organizations,¹⁶ and has been applied in higher education institutions, public-sector bodies and in corporations. A number of studies have demonstrated the statistical reliability and validity of the Competing Values Framework approach and the Organizational Culture Assessment Instrument.¹⁷ Cameron and Quinn¹⁸ have collected cultural profiles using theOCAI from more than three thousand organizations and have developed a "typical" dominant culture type for organizations from a number of sectors.

The CVF has also been discussed in terms of its potential usefulness in library settings. Faerman¹⁹ explored the CVF as a management tool for examining organizational performance and for the design of organizational change. She examined how libraries might move to user-centredness using the four competing and complimentary quadrants of the CVF. Varner,²⁰ in his doctoral dissertation, explored the application of this cultural assessment framework to an academic library setting and demonstrated that the CVF provides a neutral (non-threatening) presentation of information to initiate discussions of organizational change. Kaarst-Brown et al.²¹ discussed the use of the CVF as a tool for understanding organizational culture in libraries from all sectors, the role of organizational culture in the socialization of new librarians, and the use of the CVF to identify dominant cultures and subcultures. Lakos and Phipps²² explored the utility of the CVF in creating or developing a culture of assessment in learning organizations. With the exception of the Varner study however, we did not discover any research literature that discussed the experience of applying the CVF and theOCAI in a library setting.

Methodology

Applying the Competing Values Framework

We adopted the Competing Values Framework as our methodology for assessing the organizational culture of the University of Saskatchewan Library. It provides a theoretical framework for understanding organizational culture, offers a reliable and validated instrument for diagnosing that culture, and a systematic strategy for changing the organizational culture. It allows researchers to derive an organizational culture profile that reflects underlying attributes, including the management style, strategic plans, climate, reward system, means of bonding, leadership, and basic values of an organization.

Our interest in subcultures was also well served by the framework and the ability to evaluate the strength and variations in subgroups adds to the depth of the analysis. Using the CVF methodology offers the opportunity to compare local findings to "average" dominant cultures in similar (or dissimilar) organizations. Cameron and Quinn have also offered practical guidance on how to most effectively create a strategy for cultural change and enhancing organizational effectiveness.²³

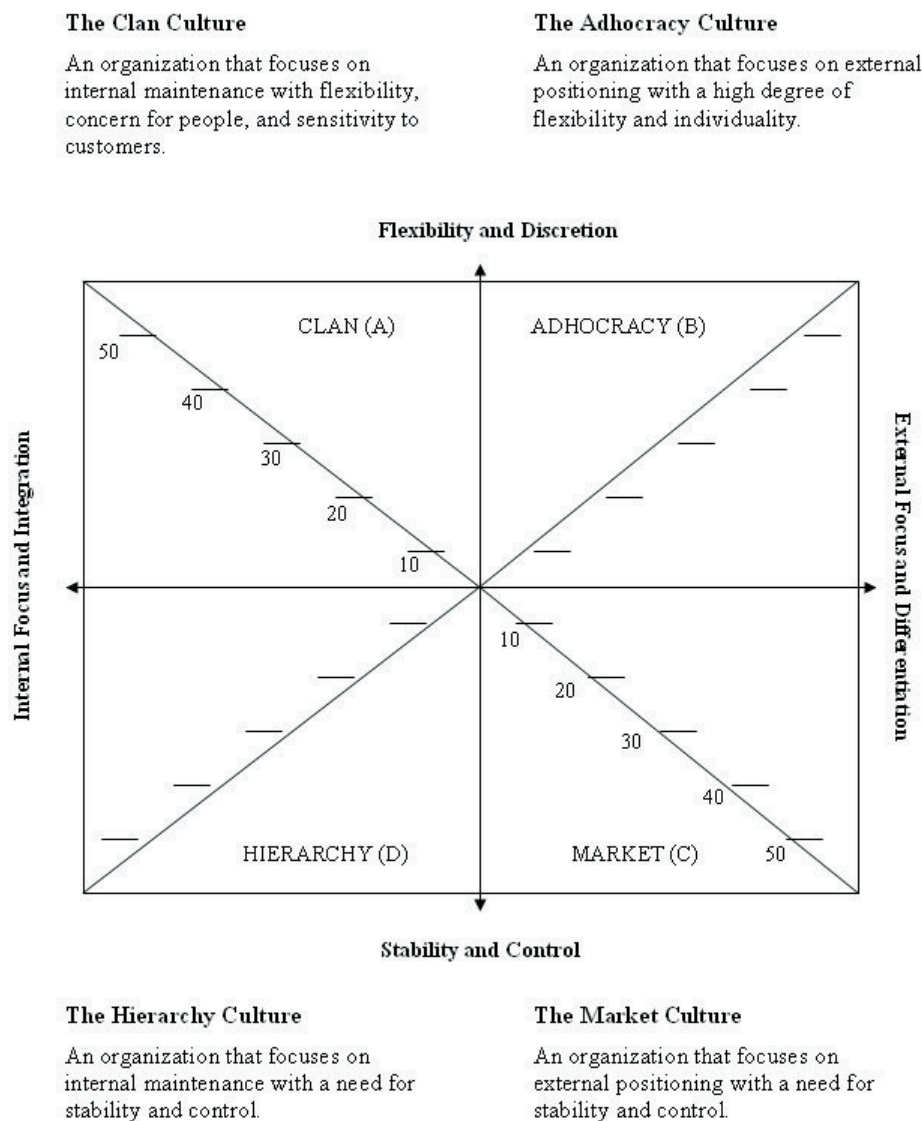
The methodology is very appealing in its simplicity both in the application and interpretation. TheOCAI is easy for participants to complete and straightforward for the researchers to code and analyze. The ability to graphically represent or plot the scores on theOCAI helps to describe and communicate the findings in a meaningful way and stimulates a high level of interest and engagement in the organizational assessment.²⁴

The CVF distinguishes between two major intersecting dimensions in organizations. One dimension (horizontal) reflects the extent to which an organization has a control orientation. That dimension runs from an emphasis on flexibility, discretion, and dynamism to an emphasis on stability, order, and control. The second dimension (vertical) reflects the extent to which an organization is focused on its internal or external functioning. This dimension runs from an emphasis on internal orientation, integration, and unity to an emphasis on external orientation, differentiation, and rivalry. These two dimensions form four quadrants which represent a distinct organizational culture and define what people value about an organization's performance. The four core values represent opposite or competing assumptions. Each

continuum highlights a core value that is opposite from the value on the other end. The dimensions therefore produce quadrants that are also competing, and contradictory along the diagonal. Each quadrant is identified as a cultural type

representing basic assumptions, orientations, and values. Thus four dominant culture types emerge from the framework. This is graphically presented in Figure 1.

Figure 1. Competing Values Framework Organizational Culture Model



From Cameron, Kim S. and Quinn, Robert E. 2006. *Diagnosing And Changing Organizational Culture: Based On The Competing Values Framework*. San Francisco: Jossey-Bass.

Each of the CVF quadrants represents a particular set of organizational cultural characteristics. The hierarchy culture is characterized as a formalized and structured place

to work where formal rules and policies hold the organization together, procedures govern what people do, effective leaders are good coordinators and organizers, maintenance of a smooth running

organization is important, and the long term concerns are stability, predictability, and efficiency. The market culture is characterized as a results-oriented workplace where leaders drive the organization toward productivity, results, and profit; an emphasis on winning holds the organization together; the prevailing concern is on competitive actions, achieving goals and targets, and increasing its competitive position. The clan culture is typified by a friendly place to work where people share a lot of themselves; leaders serve as mentors; the organization is held together by loyalty and tradition; commitment is high; the emphasis is on the long term benefit of individual development, high cohesion and morale; and a premium is placed on teamwork, participation, and consensus. The adhocracy culture is characterized by a dynamic, entrepreneurial, and creative workplace where people take risks; leaders are visionary and innovative; the commitment to experimentation and innovation holds the organization together; readiness for change and meeting new challenges is important; and the emphasis is on being at the leading edge of new knowledge, services, and products. It should be noted that no one cultural type or set of characteristics is considered to be superior or more valued than another. Organizations often embody qualities in all four quadrants, and emphasis in any particular quadrant may shift over the course of time.

The Organizational Culture Assessment Instrument (OCAI) poses a series of statements to respondents that reflect the key elements in describing organizational culture. Scores on the OCAI are used to plot a graphic representation of

the types of culture that are dominant in the library, the fundamental assumptions on which the library operates, and the values that characterize it. It is also possible to identify subculture perspectives within structural units, professional staff, paraprofessional staff, management, or as in the case of the first phase of our research, tenured and pretenured librarians. By considering the preferred organizational culture, the framework can also be used to predict organizational performance and identify the cultural characteristics that members think should be developed and enhanced, or in some cases de-emphasized, to match the future demands of the environment and the opportunities that it represents.

The University of Saskatchewan Library Case Study

The U of S Library case study involved the administration of a four part questionnaire and structured interviews with the pretenured librarians. Part One (Participant Profile) of the questionnaire captured information about the number of years worked at the U of S Library, number of years in the profession, and tenure status. In Part Two (Current Organizational Culture) respondents were asked to answer six questions on the OCAI to reflect their perception of the current state of the U of S Library. The questions contained four descriptions of academic libraries and respondents were to distribute one hundred points among the four descriptions depending on how similar the descriptions were to the U of S Library. A sample question is shown in Figure 2.

Figure 2. Sample of the Organizational Culture Assessment Instrument**Part 2 Organizational Profile of the Library**

Please answer the following six questions to reflect your perception of the *current state* of the U of S Library system. Each of the questions contains four descriptions of academic libraries. Please distribute 100 points among the four descriptions A, B, C, D depending on how similar the description is to the U of S Library. None of the descriptions is any better than the others; they are just different. For each question, please use 100 points.

2.1 Dominant Characteristics (Divide 100 points)

- A. _____ Library A is a very personal place. It is like an extended family. People seem to share a lot of themselves.
- B. _____ Library B is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.
- C. _____ Library C is a very formalized and structured place. Policies and procedures generally govern what people do.
- D. _____ Library D is very competitive in orientation. A major concern is with getting the job done. People are very production oriented.

In Part Three (Preferred Organizational Profile) of the questionnaire, participants answered the same six questions according to how the Library should be in five years in order to be highly successful. In Part Four (work environment questionnaire) respondents rated forty four statements on a five point Likert scale according to the degree to which they accurately described the Library. Part Five provided two open-ended questions seeking any additional comments about factors that support or impede their work success.

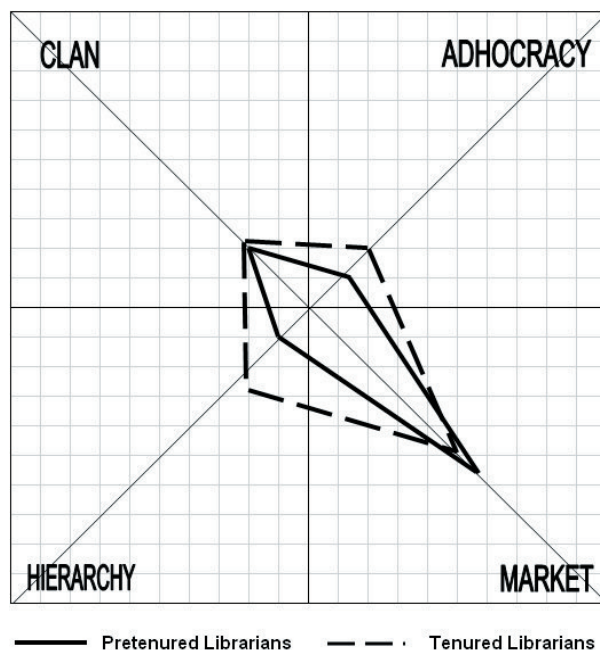
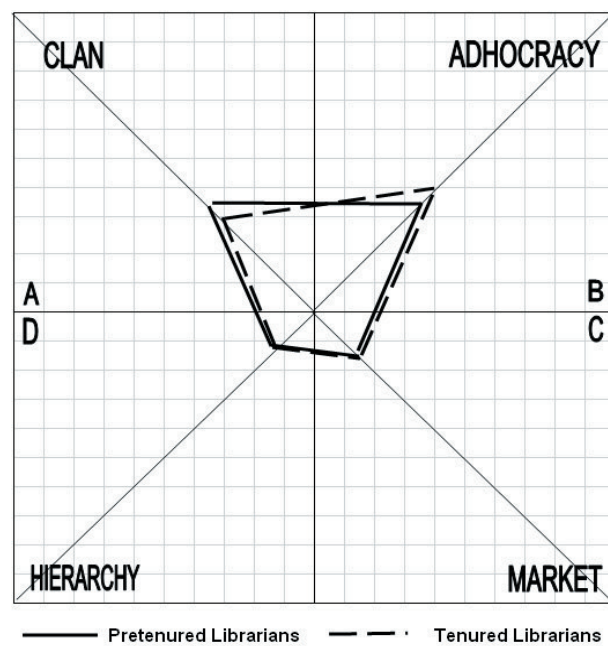
Results

All librarians at the University of Saskatchewan Library were included in the study with the exception of the two researchers and four librarians who were on leave at the time of the study. Thirty six librarians received the questionnaire and twenty four responded (a response rate of 67%). Twelve of the thirteen "new" librarians (the pretenured librarians appointed within the last five years) and

twelve of the twenty three "established" tenured librarians responded. All pretenured librarians were invited to participate in a follow-up structured interview. Eight interviews were completed with seven transcripts released.

Plotting the Culture

Using the scores on the OCAI, we constructed an organizational culture profile to create a picture of the U of S Library's culture with its dominant aspects as it currently exists. We also plotted the preferred culture to compare the extent to which the current culture matches (is congruent with) the preferred culture and to identify where cultural change might be in order. As we were interested in investigating the possible existence of a subculture represented by the pretenured librarians, we plotted their scores separately from the tenured librarians. Figure 3 shows the current culture profile and Figure 4 the preferred culture profile expressed by both groups.

Fig 3. Current Organizational Culture Profile**Fig 4. Preferred Organizational Culture Profile**

The Current Organizational Culture

The U of S Library scored highest in the Market culture quadrant for both pretenured and tenured librarians. A market culture describes an organization focused on external positioning with a need for stability and control. The major concern is getting the job done and on transactions. People are competitive and goal oriented. The leaders are hard drivers, producers, and competitors. They are tough and demanding. The glue that holds the organization together is an emphasis on productivity and winning. Reputation and success are common concerns. The long-term focus is on competitive actions and achievement of measurable goals and targets. Success is defined in terms of market share and penetration. Competitive pricing and market leadership are important.²⁵ This U of S Library culture plot does not vary widely from the "average" organizational culture plot identified by Cameron and Quinn from their investigations of over one thousand organizations.

The Preferred Organizational Culture

We plotted the preferred culture and compared the extent to which the current culture is congruent with the preferred culture. On the preferred culture profile the Library scored highest in the adhocracy culture quadrant for both librarian groups.

Organizations with this dominant culture are considered a dynamic, entrepreneurial, and creative place to work. People stick their necks out and take risks. The leaders are considered to be innovators and risk takers. The glue that holds the organization together is commitment to experimentation and innovation. The emphasis is on being on the leading edge. The organization's long-term emphasis is on growth and acquiring new resources. Success means gaining unique and new products or services. Being a product or service leader is important. The organization encourages individual initiative and freedom.²⁶

Existence of Subcultures

By plotting the scores separately for pretenured and tenured librarians we were able to compare and identify differences in perceptions between the two groups on the current organizational culture and the preferred culture. According to Cameron and Quinn an analysis of scoring should be sensitive to differences of ten points or more.

Responses were similar for the two groups for the current organizational culture. While both groups saw the library as dominated by the market culture, the pretenured librarians scored it notably higher (by thirteen points) than the tenured librarians. The tenured librarians scored the library

as more hierarchical (by ten points) than the pretenured librarians.

A comparison of responses for the preferred culture revealed that all librarians prefer an increase in the adhocracy dimension (twenty-six points higher for the pretenured librarians and twenty-two points for the tenured librarians) and a significant reduction in the market culture (thirty-nine points less for the pretenured librarians and twenty-eight points for the tenured librarians). The pretenured librarians also showed a preference for increased elements of the clan culture, scoring an eleven point difference between where the organization is currently on this dimension and where they would like it to be. These ten point differentials between the tenured and pretenured librarian groups suggest they represent subcultures in terms of their perceptions about the current and preferred cultures of the library.

Cultural Congruence

Cultural congruence indicates that various aspects of the organization's culture are aligned and reflect the same set of cultural values. Determining cultural congruence for the library involved plotting each of the six cultural attributes on the OCAI: organizational characteristics, organizational leadership, management of employees, organizational glue, strategic emphasis, and criteria of success, to determine the extent to which each attribute reflects (is congruent with) the same dominant culture type. For both the current and preferred culture profiles the plots were consistent within the tenured and pretenured groups, indicating a congruent culture within each group. Research has shown that congruent cultures are more typical of high performing organizations. Having all aspects of the organization clear about and focused on the same values and sharing the same assumptions eliminates many of the complications, disconnects, and obstacles that can get in the way of effective performance.

Work Environment Factors

The work environment portion of the questionnaire and the subsequent interviews with pretenured librarians were developed to augment the cultural profiles and to provide additional information about the degree to which there was agreement that particular factors were perceived to inhibit or support librarian success. The statements fell into five theme areas: organization and culture; governance and decision making; role of managers;

recruitment, orientation and support; and the role of colleagues. Interview questions were developed to explore in more detail themes that emerged in the responses to these statements and the two open ended questions.

A preliminary analysis of this data, reported elsewhere,²⁷ further illustrates the differences in perceptions and experiences between the tenured and pretenured librarians. The areas of most pronounced difference included perceptions about the stability and predictability of the organization; the degree of respect, and valuing of contributions; opportunities for involvement in the administrative life of the organization; the ability to influence decision making and library priorities; the role of managers; and the role of colleagues. This data supports the Competing Values Framework findings of shared subculture perceptions within these two groups. Recurring themes in the interview data reveal that pretenured librarians are seeking the type of support from managers, colleagues, and library leaders which reflect the adhocracy and clan culture characteristics: guidance and direction; leadership by example; feedback and support; recognition; clear decision making; skilled management; respect and trust; orientation and mentorship; professional discourse; innovation, and creativity; and support for research activities.

Conclusions

Outcomes from the University of Saskatchewan Study

This research has helped us to make sense of our own organizational culture. We have learned that while there is general agreement among all librarians about the current organizational culture, there are some notable differences between the experiences, perceptions, and expectations of the pretenured and the tenured librarians. These differences are important as they have implications for how effectively the library can move forward, and for the continued success and retention of individual librarians. An awareness of these differences is critical not only for managers and those in leadership positions, but also for all librarians in order to understand how the organization is changing with the influx of "new" librarians. Although subcultures do exist in the library there is agreement in terms of the preferred organizational culture, one emphasizing a transition from a market and hierarchy culture to an adhocracy with stronger elements of a clan

culture. We are all moving in the same direction, working toward a similar preferred organization.

Organizations often shift dominant cultural characteristics as they move through their life cycle. Quinn and Cameron²⁸ found that clan cultures with an emphasis on adhocracy are most often found in newer organizations while market cultures with a focus on hierarchy often exist in mature organizations. This has led us to speculate whether the desire for a shift to an adhocracy culture with increased clan elements in our library can be attributed, in part, to the influx of new professional staff and/or to the part played by new leadership. Does this signify a type of organizational renewal? In the next phase of our research we will investigate this further and expand our survey to include all library staff in order to capture a more comprehensive picture of the current and preferred organizational culture(s) and to understand the influence of other subcultures within the organization. We will also be looking for opportunities to integrate our findings with the library's current strategic planning process. We are also interested in replicating our case study in other academic libraries in order to gather comparative data on organizational culture analysis for university libraries in Canada.

Importance of Assessing Organizational Culture

Assessing organizational culture provides an opportunity to take the "directional temperature" of the organization. Understanding the current organizational culture of the library and looking for areas of common understanding about the organization provides a starting place for organizational change. By observing the areas of greatest discrepancy between the current culture and the preferred future culture a road map for change can be developed.

The Competing Values Framework is one of the most used cultural assessment methodologies available to organizations planning and managing major change.²⁹ Its value lies in the process for identifying what needs to change in an organization's culture and for developing a strategy to initiate a culture change process and facilitate organizational transformation. Varner found that using the CVF in an academic library resulted in a complex, multidimensional understanding of organizational effectiveness; revealed deep seated values that reflected how the library might respond in times of crises; and that the CVF can be used for organizational change that encourages,

participation and collaboration to achieve change, what Varner terms "action research."³⁰

Understanding organizational culture as we move through times of change is critically important.³¹ University libraries in Canada are facing a change from long periods of human resource stability characterized by long-term, well established, librarian complements to incorporating a growing number of newly recruited librarians. This will require an adjustment in management style and leadership direction. A shift in culture during these times of change should not be surprising. Concern for organizational culture is more than an issue of recruitment and retention. It is at the heart of organizational effectiveness and success.

Managing Organizational Culture Change

Cameron and Quinn propose a six step process for systematically managing culture change. It involves reaching consensus on the current culture; achieving consensus on the desired future culture; determining what the changes will and will not mean; identifying the key values, desired orientations, and behavioral principles of the new culture; determining strategic actions to be undertaken; and developing an implementation plan. The intention is to create a broad consensual vision of what the desired future will be, what the critical elements of the organization will be, what will change and what won't change, and what will be preserved in the current culture—capitalizing on the core competencies, the unique mission, and the special organizational identity that has been created over time.

For the U of S Library, managing the change process involves focusing on what it means to increase the adhocracy and clan cultures and decrease the market and hierarchy cultures. This means shifting a mature organization to a new cultural model. Stating what is meant and what is not meant by this change and articulating the benefits that will accrue to the library from more emphasis on adhocracy and clan cultures will provide a more concrete understanding of the desired organizational culture change. This shift in emphasis is beginning to surface in the course our strategic planning activities. As researchers, we are interested to explore how the preferred cultural characteristics might independently emerge through this process.

Since culture change is about behavior change, an important element of action planning is to

specify what people will be doing in the desired culture.³² There has to be agreement on acceptable individual behavior. It must be consistent with new or desired cultural values and be reinforced by reward and recognition. Achieving lasting change in organizations requires getting employees involved in planning and implementing change. As Schein points out: "learning and change cannot be imposed on people. Their involvement and participation are needed in diagnosing what is going on, figuring out what to do, and actually doing it."³³

Cameron and Quinn³⁴ discuss the critical skills and competencies managers must develop in order to facilitate the culture change effort. It is a process heavily reliant upon self-reflection and self-assessment. Personal work plans and continued improvement are emphasized as key in this process for leading a cultural change. Quinn's³⁵ work in mapping managerial competencies and leadership roles to the quadrants of the CVF is helpful in illustrating how leaders can most appropriately focus their skill development.

At the University of Saskatchewan Library, our challenge now is to integrate the findings of our research into our new strategic planning process, and to encourage our colleagues to engage in discussion around what we have learned to date about the current and preferred organizational cultures. Our findings have confirmed our hypothesis of the existence of subcultures within the librarian complement. At the same time, we were interested to discover a high degree of agreement about a preferred culture. Expanding our research to include all library staff will help to create a more complete picture of the organization to better understand how the organization functions as a complex, complimentary, and in some cases competing set of units, groups, and individuals. What we value, how we make sense of our environment, and how we teach new members is essential to how we operate as a healthy and successful organization.

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Tools for Creating a Culture of Assessment: The CIPP Model and Utilization-Focused Evaluation

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Abstract

Many libraries struggle with the process of creating a culture of assessment and building the internal evaluation capacity of the library as an organization. This paper will outline how two formal evaluation approaches frequently utilized in the context of evaluating educational and social programs can be applied to the context of academic library assessment projects. The two approaches are the CIPP model (Context Input Process Product) and utilization-focused evaluation. Both models support an organizational approach to evaluation that emphasizes the use of results for decision-making and program improvement. Daniel Stufflebeam's CIPP model, sometimes referred to as Decision/Accountability-Oriented Evaluation, is a systems-based approach to evaluating programs that provides a useful structure for creating and sustaining a unified organization-wide evaluation strategy. The utilization-focused approach, articulated by Michael Quinn Patton, incorporates participatory evaluation techniques and details how evaluation can be structured to maximize use of results. Utilization-based evaluation assumes that evaluation is conducted openly and engages many stakeholders in the process of designing and conducting the evaluation.

These two complementary evaluation models used either separately or in conjunction fit well into the academic library culture. Both approaches are useful for assessment and evaluation of library programs because they can be used to effectively engage librarians and administration together in instituting a culture of assessment where evaluation of library programs is viewed as a valuable tool rather than an added burden or threat. These approaches are also easy for libraries to adopt when the organizational capacity for supporting evaluation and assessment is low, since both approaches leverage existing decision-making and project support structures rather than relying on external evaluation resources and expertise.

Introduction

In a climate of rising costs, shrinking or at best level resources, and rapid change, research libraries are increasingly recognizing the value of stronger assessment programs to promote their value and make wise, well-informed decisions about resource use.¹ Rising costs of higher education in general and political changes have also generated increasing accountability demands on both public and private colleges and universities. Given these factors, research libraries want and need to demonstrate their value to the teaching, research, and service missions of their institutions. The task at hand involves not only adding new roles and skills in the research library but also a transformation of the organizational culture.² Many libraries struggle with this process of creating a culture of assessment, which for the purpose of this article will be understood using Lakos and Phipps definition of "an organizational environment in which decisions are based on facts, research, and analysis, and where services are planned and delivered in ways that maximize positive outcomes and impacts for customers and stakeholders."³ Libraries face several key questions in their efforts to make these changes. How can they build a culture of evaluation, so that many people contribute to evaluation? How can libraries provide a context for evaluation strategies and results to promote their use? How can libraries conduct evaluation in a way that directly supports decision making?

To address these challenges, research libraries are in need of evaluation approaches which leverage limited resources effectively and strengthen their organizational capacity for conducting internal program evaluation. They also need assessment results tailored to the direct useful support of decision-making processes. There are a wide range of philosophies and approaches to program evaluation within organizations, but with the needs outlined above in mind, two approaches

in particular are worthy of consideration for how they might fit the needs of research libraries. Two existing approaches from the evaluation literature are that may be useful to libraries are outlined below. These two approaches both view evaluation's most important function as formative rather than summative. In addition, these models can help libraries address significant challenges typically encountered in the process of building a culture of assessment. These approaches are the decision-oriented CIPP (Context Input Process Product) model of evaluation, and the utilization-focused evaluation approach.

A Note on Terminology: Assessment vs. Evaluation

In library literature, particularly in reference to academic libraries, the term assessment appears more frequently used than the term evaluation. This usage aligns with a similar preference for the term assessment over evaluation that exists in higher education literature. In social science literature, the term evaluation appears more commonly, with assessment sometimes having a more limited meaning of measuring outcomes on the individual student level or restricted to a sense of monitoring and measuring without judgment. More specifically, evaluation is often defined in the social sciences as referring to the process of determining merit, worth or value, or the final product of that activity.⁴ Both terms typically refer to the same activity within an organization. For the purpose of this paper, the two terms are used interchangeably to refer to the activity described in the social science definition of evaluation.

CIPP and Utilization-Focused Evaluation

These two complementary evaluation models used either separately or in conjunction fit well into the academic library culture. In the evaluation of library programs, these approaches can be used to effectively engage librarians and administration together in instituting a culture of assessment. Both approaches leverage existing decision-making and project support structures rather than relying on external evaluation resources and expertise. These approaches are also easy for libraries to adopt when the organizational capacity for supporting evaluation and assessment is low. The two approaches are outlined below along with key resources to support their use.

The CIPP Model of Evaluation

Daniel Stufflebeam's CIPP model, which he classifies as a Decision/ Accountability-Oriented Evaluation model, is a systems-based approach to evaluating programs that provides a useful structure for creating and sustaining a unified organization-wide evaluation strategy.⁵ CIPP is an acronym arising from the four types of evaluation that this approach combines: Context, Input, Process, and Product. Context evaluation focuses on identified needs, opportunities for improvement, and specific problems to be solved. Input evaluation analyzes and helps improve plans for addressing priority needs. Process evaluation records, judges, and guides the implementation of plans. Product evaluation includes the assessment of both intended as well as unintended outcomes. CIPP evaluations are used proactively for guiding decision-making and retroactively to issue summative reports, particularly for accountability. Among the recommendations of this model are the use of multiple observers and informants, mining existing information as much as possible, using multiple procedures for gathering data, cross-checking qualitative and quantitative data against one another, independent reviewing by stakeholders and outside groups, and ensuring that feedback from stakeholders plays a key role in the entire process.⁶

The CIPP model has the advantage of being fairly flexible and easily adapted to planning and conducting evaluations of not only projects but also programs, personnel, products, institutions, and systems. In addition, this model offers a framework that can be adapted to a wide range of situations and helps ensure that all relevant factors of the environment, program implementation, and outcomes are taken into consideration when planning an evaluation. Finally, the CIPP model connects readily to the needs of decision makers, providing an opportunity to define goals and priorities (context evaluation); a framework for assessing competing proposals in terms of feasibility and alignment with acknowledged goals (input evaluation); providing a context for interpreting outcomes and planning for service improvement (process evaluation); and keeping the organization focused on achieving important outcomes (product evaluation). Approaching and contextualizing evaluation in this way clearly links its activities and purpose to institutional planning

through the explicit connection of goals, plans, actions, and outcomes to core institutional values.⁷

Utilization-Focused Evaluation

The utilization-focused approach incorporates participatory evaluation techniques and details how evaluation can be structured to maximize use of results. Utilization-based evaluation assumes that evaluation is conducted openly and engages many stakeholders in the process of designing and conducting the evaluation.⁸ The approach is based in the premise that use of evaluation findings is maximized by engaging stakeholders in the entire evaluation process from design to implementation of recommendations. Their involvement can increase the likelihood that the evaluation addresses questions of greatest importance to those in a position to directly make use of its findings, and also reduces the cultural barriers that can inhibit use of results by increasing transparency and empowering stakeholders. Patton developed a checklist that outlines recommended twelve steps for producing maximally useful evaluation findings. These twelve steps include: performing an evaluation readiness assessment; identifying the primary intended users of the evaluation findings; the creation of an evaluation plan in close collaboration with program stakeholders; and active facilitation of evaluation use by the evaluators.⁹ Incorporating a utilization-focused approach to evaluation has several advantages. First, this approach facilitates organizational learning by helping organizations understand what does and does not work well, by strengthening program implementation, and by enabling evaluation findings to inform directions for new programs. One strength of utilization-focused evaluation lies in its ability to engage key decision-makers and stakeholders in the process of determining what key questions should be addressed by the evaluation.

In a utilization-focused evaluation approach, the process begins by asking what decisions the evaluation is intended to influence and gearing the entire evaluation process toward providing support for those decisions. In most cases an evaluation plan which addressed all possible evaluation questions of interest would exceed the level of resources available to conduct the evaluation. Some priority must be applied to determine which key evaluation questions will serve as the focus for the evaluation effort. In a utilization-focused evaluation, the selection of questions for the focus

of the evaluation is driven by those areas that are most likely to impact the decision-making that the evaluation is intended to serve. One key strategy for building a culture of assessment is to strengthen the internal evaluation capacity of the organization, particularly when financial resources specifically earmarked for assessment are limited. A final advantage of the utilization-focused approach is what Patton terms the potential for “process use.”¹⁰ Process use is the benefit that organizations get from participating in the evaluation process itself, independent of whether the outcomes, findings, or recommendations of the evaluation have an impact. This process use may involve the organizational learning that occurs as a result of clarifying the goals of a program or designing the evaluation of the program. This is in contrast to traditional research endeavors, in which every effort is made to prevent the study of a phenomenon to impact that phenomenon. Process use is an effective tool for staff development, creating an environment where staff are better able to use evaluation information; consider data and findings, including inconsistencies; clearly articulate their values; and examine and identify unstated assumptions inherent in the evaluation process.¹¹

Confronting Barriers to Creating a Culture of Assessment

The effective use of systematic and valid evaluations is a crucial component for any service organization.¹² Libraries are no exception to this rule. As was noted above, there is growing support in academic libraries for aligning the culture of these organizations with the culture of evaluation and assessment as well as growing recognition of the challenges faced by academic libraries in this endeavor. Evaluation theorists have also noted the cultural aspects of this endeavor, with evaluation having its own language and values.¹³ Libraries and other organizations face an array of challenges to implementing a culture of assessment. Three challenges in particular will be addressed by the evaluation strategies and models discussed here: a lack of evaluative thinking among staff, a lack of engagement in evaluation activities across all levels of the library, and the threat presented by what Stufflebeam termed “pseudoevaluations.”¹⁴

As noted above, in a culture of assessment a feedback loop exists where data are gathered, analyzed, and used to drive decision making about improved services. Lakos noted the need for ongoing staff development in evaluation methods

and skills as a means for building a culture of assessment in libraries. Evaluative thinking includes data driven rather than solely intuitive decision making as well as overall lack of systems thinking; in other words, all staff should be in a position to ask themselves, "How does what I am doing connect back to a program's or service's goals and forward to its specific intended outcomes?" In addition, staff need to not only understand their role in delivering quality services but also in data gathering efforts to analyze the merit and worth of those services to their patrons. Engagement of all levels of staff in evaluation efforts is also crucial. If staff are not treated as key stakeholders and directly engaged in planning and conducting evaluations, the danger exists that they will view assessment as an external, project-based, transitory process rather than an ongoing systematic effort. In addition, on occasions when the evaluation findings are the product of an external evaluation effort, the ability of staff to accept and effectively use these findings is enhanced through having had direct participation with previous evaluation efforts. Finally, the CIPP and utilization-focused evaluation models have been selected because they address the threat of pseudoevaluations, or evaluation efforts designed to "promote a positive or negative view of a program, irrespective of its actual merit and worth."¹⁵ Both public relations driven efforts, where positive results are selectively reported, and politically-controlled evaluations fall into this category of invalid evaluations. The CIPP model addresses this threat by offering a systematic approach to designing comprehensive evaluations; utilization-focused evaluation also can counter this potential concern by ensuring that evaluations are focused in such a way as to maximize the potential for change and legitimate use of findings.

Summary

By investigating and adopting existing evaluation approaches, libraries can bolster their efforts to foster a culture of assessment. In particular, libraries should look for fully elaborated evaluation models and approaches such as CIPP and utilization-focused evaluation that provide an organized framework to guide evaluation implementation and increase levels of staff participation in these endeavors. The strengths of these particular models as highlighted here are their ability to support decision-making, engage library staff as stakeholders in the entire process of evaluation from design to implementation of

recommendations, and leverage the opportunity of evaluation process use. Finally, the potential of process use is of particular value in that by participating actively in the planning and conduct of evaluations, staff will become more aware of the complexities of evaluation and thus savvy consumers of evaluations.

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The Use of Outcome Based Evaluation (OBE) to Assess Staff Learning Activities at the University of Maryland Libraries

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Abstract

The University of Maryland (UM) Libraries introduced their Learning Curriculum in 2001 as part of its commitment to become a team-based learning organization. This comprehensive program seeks to provide educational and developmental opportunities to all library staff members in order to develop the skills needed to support the Libraries' goals. Needs assessment and evaluation both play a critical role in the development and implementation of Learning Curriculum activities.

First piloted in 2004, Outcome Based Evaluation (OBE) began to be used by the Libraries in earnest to assess the impact of staff participation in Learning Curriculum activities in 2005. This paper describes the evolution of OBE as a tool for assessing the Learning Curriculum as a whole and its individual modules.

Introduction

The Learning Curriculum (LC) is comprised of ten components, ranging from customer service through computer skills.¹ Each component includes a number of individual modules, which are presented by in-house staff, subject experts, and consultants. LC programs are primarily designed for and offered to library faculty, staff and graduate assistants, but library student assistants and members of the greater University of Maryland community have attended programs as well. Since its inception in 2001, there have been a total of 175 workshops offered, with a cumulative attendance of 2,618. Of the 175 workshops offered, several have been repeated due to demand or due to requirements from the University.

Outcome Based Evaluation (OBE) is a systematic way to assess the extent to which a program has met its intended results. Outcome Based Evaluation looks at the impacts, benefits and changes to

participants as a result of the program(s) efforts during and/or after their participation. OBE examines these differences in the short-term, intermediate term and long-term.

OBE programs are often viewed as being based on six components:

- **Inputs**—The resources and materials used in the activities or process of the program. These must be easily identifiable and common to many organizations and programs.
- **Activities**—Processes or actions used in the program to meet the needs.
- **Outputs**—The measure of those served through the program.
- **Outcomes**—The actual benefit/impact or change for the participants during and after the program.
- **Outcome targets**—The number and percentage of participants you want to achieve the outcome(s).
- **Outcome indicators**—Observable and measurable "milestones" toward an outcome target.

As the University of Maryland Libraries became more involved in assessment and evaluation, it was a natural decision to select one of its newer programs to evaluate. Funding agencies are beginning to request expected outcomes as part of their applications. The Institute of Museum and Library Services (IMLS) in particular requests outcomes as part of their applications process. The Learning Curriculum is not only a perfect program for which to request outside funding, but it is also perfect for Outcome Based Evaluation since its purpose is to provide the library staff with needed skills. As a result, examining the impacts, benefits and changes to participants after participation in the program using OBE was a natural progression.

Needs assessment and evaluation both play a

critical role in the development, refinement and implementation of Learning Curriculum activities. As such, a wide variety of information gathering methods have been employed in order to determine specific needs of staff and to develop appropriate programming. In addition to those assessments that provided the initial “framework” for the LC, additional activities undertaken to gather information have included periodic computer-training surveys, supervisory focus groups, and a writing workshop survey conducted in 2003.

In order to measure the impact of programs sponsored by the LC, a number of evaluation activities occur. Participation in LC activities is tracked via an online database maintained by the Office of Staff Learning and Development. However, this admittedly measures “attendance” at a session, not any “active learning” that may take place on the part of the attendee.

To further capture initial reactions to sessions, participants at each LC program are encouraged to complete an online program evaluation survey. These surveys assist in measuring reactions to the program, as well as the most important outcomes from the workshop (as reported by the participant). The Office of Staff Learning and Development compiles survey results, which are shared with session facilitators as a means of immediate feedback. Facilitators frequently use this feedback to fine-tune their programs as necessary. Program evaluation summaries are also reviewed to determine whether or not additional offerings of a particular program should be scheduled.

While *Program Evaluation* forms provide immediate feedback and reactions to individual sessions, it is equally important to determine the impact of LC programs over time. There have been several instances where the long-term impact of a session has been measured via “longitudinal” assessment, such as surveys completed by individuals attending Meeting Management training (1999) or who participated in all three Customer Service workshops offered by the Libraries (2003). An additional “post-workshop” survey was distributed in December 2003 to supervisors who attended any of the “Summer for Supervisors” sessions offered that year, in order to determine the “value” of these sessions in terms of behaviors and attitudes changed. While each of these individual efforts yielded useful data, there was no systematic means in place to assess the overall impact of the Learning Curriculum.

Early Implementation

In addition to other evaluation activities taking place, in 2003, Staff Learning and Development and the Management Information Systems (MIS) Office began looking at Outcome Based Evaluation as a means of measuring long-term impact of LC programming. The original vision for the OBE program was to create individual OBE *Logic Models* for every LC program. The *Logic Models* were based on the model used by IMLS, but were modified somewhat to fit the needs of the LC. *Logic Models* were initially developed for three workshops in the LC, and a 2004 pilot study targeted a customer service workshop. This pilot study included two separate surveys—one for participants and one for their supervisors. The goal of the evaluation was to determine the following:

- Was the program meeting stated objectives?
- What were the critical elements of the program—and what was missing?
- Did the program have long-term benefits for participants?
- What added value did the program bring to the Libraries?

The surveys were designed to be completed online and contained a maximum of five questions. Participants and supervisors were given two weeks to complete the survey. The survey response rate was lower than anticipated; with only 14% of workshop participants completing the follow-up survey (in contrast with the 100% response rate to the session-end survey). In addition to the low return rate, responses to the supervisory survey indicated that for the most part, supervisors could not understand why they were being surveyed at a time so far “removed” from the original training program. (This was the case despite the fact that they had been contacted at the time of the workshop and notified that they would be surveyed at a later date.) As a result of this experience, Outcome Based Evaluation of the LC was put on hold and retooled.

Current Implementation

After the 2004 pilot results were analyzed by Staff Learning and MIS, we determined that a new approach towards OBE was needed. Instead of creating *Logic Models* for each individual LC workshop, we decided to develop a single *Logic Model*, intended to encompass all LC programs. The target audience is defined as UM library faculty, staff, and graduate assistants. The inputs

include such activities as assembling trainers, developing and providing training sessions, publicity efforts, and producing applicable handouts for each session, among others. The desired outcome is that the participants should be able to successfully practice the skills gained through the training programs. The **intended outcomes** span three time periods:

- **Immediate**—participants benefit from attendance – either by learning a new skill or gaining a better understanding of a current skill;
- **Intermediate**—participants begin to comfortably use the information or techniques over a period of time; and
- **Long-term**—participants continue to use skills learned and continue to attend LC sessions.

The LC indicators for each of the **intended outcomes** are that there should be observable and reported evidence of change by the participants. This change could include skills, attitudes, behaviors or condition of status. The **outputs** are the number of participants and the number of sessions held.

Evaluation goals are similar to those of the pilot program, and questions were developed to determine the degree to which participants are able to successfully practice the skills/abilities gained

through attendance at training programs. Sample questions include:

- What knowledge/skills did you learn at this workshop?
- Have you used or applied the knowledge/skills from the workshop?
- Are there other skills you wished had been taught at this workshop?
- What other topics would you like to see Staff Learning and Development offer?

In summer 2005, the comprehensive program of measuring LC activities via OBE was instituted. All workshops taught since July 1, 2005 are included in this program, with each workshop being evaluated at session-end as well as six months after its conclusion. The first six-month follow-up survey was sent in January 2006, and as of August 2006, twenty-three follow-up surveys have been distributed and analyzed. Surveys are completed online as they were in the pilot program, and participants are given two weeks during which to submit their responses. Unlike the pilot program, surveys are sent only to program participants at this time. Survey response rates range from 38% to 100% for the session-end survey and 0% to 100% for the six-month follow-up survey. Actual response rates contrasted with the desired rates outlined in the LC *Logic Model* are as follows:

	Actual Response (avg.)	Desired Response (avg.)
Session-end Survey	66.4%	90%
Six-Month Follow-Up	37%	50%

As evident above, the response rate to the session-end survey is visibly higher. This higher rate can be attributed to the fact that participants are asked to respond at the end of each workshop and are more likely to do so.

Although response rates to the surveys are not as high as the target in the OBE plan, comments contained within both surveys have yielded useful information for the Office of Staff Learning and Development. Comments included in the follow-up

survey tend to be positive and constructive—and for the most part, the surveys tend to be well-received by participants.

Overall, a majority of survey respondents (67%) have indicated they have used the skills introduced in the program they attended, with an even higher number of attendees (82%) noting that they feel the teaching is “on target” and needed skills are covered. Positive reviews—such as “Thank you for giving knowledge and the most important thing,

giving confidence that nothing is difficult to learn!" are contrasted with less glowing remarks, such as "I need to take this workshop over again but want to do this only if the email lingo is explained more clearly. Actually, this was one of the worst courses I've taken here. You have to teach novices, not experts." Despite such negative reactions, survey results indicate that, on the whole, participants feel the workshops they have attended have had a positive impact on their work, and they would recommend the workshop they attended to their colleagues.

Positive and negative remarks contained in survey responses are reviewed by Staff Learning, particularly when planning "repeat" offerings of a program. Responses to the question "What other topics would you like to see Staff Learning and Development offer?" are currently tracked in an *Excel* worksheet and are reviewed periodically by Staff Learning and the Libraries' Staff Education Coordinating Team, to ensure that programs requested are addressed.

One reason for the positive acceptance of OBE in this implementation could be due to the degree of publicity the program has received. In an effort to encourage responses to the surveys, the publicity effort has been more extensive than it was in the pilot—with participants reminded of the follow-up survey at the end of the workshop, as well as in a follow-up e-mail containing the link to the session-end survey sent to participants. In addition, an introductory article appeared in *Library Matters*, the staff newsletter, at the time the first six-month surveys were distributed—as a reminder to all staff that this evaluation effort was underway.

Conclusion

The session-end and OBE surveys have yielded useful information for Staff Learning and Development thus far, and will continue to be utilized as one means of program assessment. The response rates are not as high as projected in our indicators, but have improved significantly from the pilot program. This may indicate that our projections of 90% were too high initially and need to be reexamined.

Some survey respondents have noted that they do not recall specific skills introduced in a program, but assume they have already been integrated into their daily routines. For example, one respondent noted, "I remember finding the workshop very useful at the time and I'm assuming that the skills I learned there have been absorbed into my skill set."

Although not every workshop receives a "glowing" review, overall staff reaction to programs offered continues to be positive, which indicates two things. First, the LC offerings are meeting the needs of the library staff and second, the LC program is having an impact and is benefiting the staff. Improving staff skills also improves the Libraries' contribution to the educational mission of the University as a whole and improves service to library users.

In addition to the LC surveys primarily aimed at assessing staff response to programs which meet their needs, the Libraries also conduct user surveys yearly. One is an in-house survey and the other is the LibQUAL+® survey. A review of these survey results over time has shown an improvement in users' satisfaction with library staff. The use of OBE helps us demonstrate our progress and results. We must be able to articulate whether or not we are producing results and, if not, what improvements we need to make in order to produce the desired results. As we analyze the results of our LC surveys, it becomes obvious that several areas need to be addressed. One area in need of further attention is the survey itself—are we asking the right questions to truly learn whether we are producing the desired results? Do we need to review the time frame for sending out the long-term survey? Are we mining the data thoroughly enough and gaining enough insight to make improvements in the LC offerings or to assure that we are meeting the needs of the staff in a timely and effective manner? Are there other tools that we should consider using to gather information, e.g., focus groups or interviews?

Our experience with OBE has demonstrated that it is a useful evaluation method. We will continue to refine our use of OBE with the Learning Curriculum and continue to review and refine our *Logic Model*, data gathering, and data analysis techniques. Among the lessons learned while developing OBE for the Learning Curriculum were:

- Make the outcomes uncomplicated.
- Review the data currently on hand.
- Decide how much data is needed for analysis and decision making.
- Make it easy for staff gathering the data.

Developing the *Logic Model* required that we consider what we were really trying to achieve. Not unlike other evaluation and assessment methods, OBE helps us demonstrate our progress and results. Moreover, we are all too aware that we must be

able to articulate whether or not we are producing the desired results and, if not, what improvements we need to make in order to do so.

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Usability Assessment of Academic Digital Libraries

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Abstract

Digital library development has been explosive since its inception in the 1990s. However, evaluation has not kept pace. Empirical research in usability is lean. We need further work on methods for analyzing usability, including an understanding of how to balance rigor, appropriateness of techniques, and practical limitations. The main research goal of this study is to develop a model and a suite of instruments to evaluate the usability of academic digital libraries.

Usability is an elusive concept and may be viewed from many perspectives. The study examines usability from the perspectives of effectiveness, efficiency, satisfaction, and "learnability." Satisfaction is further examined in the areas of ease of use, organization of information, terminology and labeling, visual appearance, content, and mistake recovery. The evaluation includes both quantifying elements and affect measures.

The outcome of the study provides benchmarks for comparison with similar sites. In addition, the study found interlocking relationships among effectiveness, efficiency, and satisfaction. However, it should be noted that each criterion has its own emphasis and should be measured separately. One cannot replace the other.

The study is a user-centered evaluation: it reports users' criteria for ease of use, organization of information, terminology, visual attractiveness, and mistake recovery. The causes of "user lostness" and navigation disorientation were identified. The issue of "click cost" was studied. A majority of participants report that they expect each click to lead them closer to the answer. The study found that different ethnic groups may have different attitudes in rating satisfaction, although there is not a statistically significant impact on performance. The study included forty-one subjects and was conducted twice to confirm findings. It was a cross-institutional study including two academic library sites, the Rutgers University Libraries and Queens College Library. The model developed in this study is applicable to other academic digital libraries or information systems, and the methods and

instruments may be tailored to fit specific systems.

Introduction

Digital library development has been explosive since its inception in the 1990s. A digital library may be defined as an organized and managed collection of digital objects available over the Internet or a server. Evaluation of digital libraries has not kept pace with digital library development. There are more works that discuss evaluation than reports with data. It is important to clarify what to evaluate, what should be the criteria, and how to measure those criteria.

The concept of a digital library has been around for decades since Vannevar Bush's description of the "Memex" in the July 1945 edition of *Atlantic Monthly*.¹ The development of digital library, however, was only possible in the 1990s and has already made phenomenal progress toward reaching a mature stage. Currently, there are different definitions of digital library between research and professional communities.² Covi and King specifically include a library's Web site as one kind of digital library:

Digital libraries include personal, distributed, and centralized collections such as online public access catalogs and bibliographic databases, distributed document databases, scholarly and professional discussion lists and electronic journals, other online databases, forums, and bulletin boards.³

Francisco-Revilla, Shipman, Furuta, Karadkar, and Arora report that digital libraries are increasingly defined as ones that collect pointers to Web-based resources rather than include the resources themselves.⁴ Greenstein shares this view and says that the digital library is known less for the extent and nature of the collections it owns than for the networked information space it defines through its online services.⁵ Paepcke et al. state that a digital library provides a single point of access to a wide range of autonomously distributed sources.⁶ These views can be seen as calling a library's Web site a portal-type digital library.

Evaluation of Digital Library

The evaluation of the digital library has not kept pace with digital library development. The issues associated with the evaluation of digital library have been discussed by several researchers. Saracevic states that "the conceptual state-of-the-art of digital library evaluation is not sufficiently developed to start with."⁷ Borgman, Leazer, Gilliland-Swetland, and Gazan report that digital libraries are "difficult to evaluate due to their technological complexity, variety of content, uses, and users, and the lack of evaluation methods and metrics."⁸ Kyriallidou and Giersch also point out that digital library evaluation efforts are hindered by a lack of tools and methodologies.⁹ The aim of this research is to develop a model and a suite of instruments for digital library evaluation.

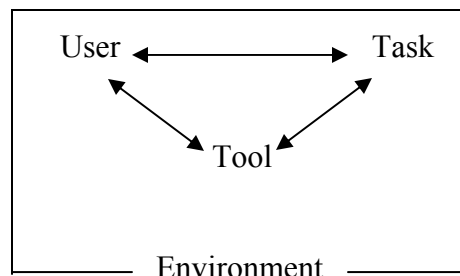
Prior evaluations of digital libraries have covered the areas of impact, quality of collection, breadth of coverage, organization of resources, metadata appropriateness, awareness of resources, users' performance, cost benefit analysis, and usability.¹⁰ The criteria for usability have included effectiveness, efficiency, satisfaction, ease of use, flexibility, learnability, and usefulness. The methods for evaluating usability have included formal usability testing, usability inspection,

cognitive walkthrough, heuristic evaluation, claims analysis, concept-based analysis of surface and structural misfits, paper prototyping, category membership expectation, card sorting, interview, observation, questionnaire, focus group, log analysis, think aloud, and field study. Some studies use one primary method while most use a mix of methods.

Dimensions of Usability

Usability is a multidimensional elusive concept. It has been used as an umbrella term covering effectiveness, efficiency, satisfaction, learnability, usefulness, usability, "memorability," easy mistake recovery, ease of use, easy navigation, visual appeal, understandability, and adaptability. Usability has a theoretical base in human-computer interaction. Many usability studies are about interface effectiveness. Interface is one of the most important aspects of usability as it is the medium through which users communicate and interact with the system. Satisfaction is the most frequently studied attribute, followed by efficiency, ease of use, effectiveness, and usefulness.¹¹ Usability is a dynamic interplay among user, task, and tool, and within the context of the environment.¹² This relationship may be illustrated in Figure 1.

Figure 1. The Four Principle Components in a Human-Machine System



A Usability Evaluation Model

This research proposes a model of usability evaluation for academic digital libraries. The model considers both quantifying elements and affect measures. It applies the definition of ISO 9241-11 (1994) that examines effectiveness, efficiency, and satisfaction, as well as taking the recommendation from an usability expert, Jacob Nielsen, that learnability is the most fundamental criterion.¹³ The effectiveness criterion in this study is counted by the number of correct answers. The efficiency criterion in this study is counted by speed (time and

steps). Satisfaction is measured by Likert scales in the areas of ease of use, organization of information, labeling and terminology, visual appearance, content, and error correction. Learnability is measured by asking subjects to cross search the other test site and watch how soon the subjects know how to conduct the tasks, how many tasks are completed correctly, and how much time it takes. The model is presented in Figure 2.

Methods

Two academic digital libraries were selected as the

test sites for this study, the Rutgers University Libraries¹⁴ and the Queens College.¹⁵ A total of forty-one subjects, students at both institutions, were recruited using convenience sampling. The study was conducted in two stages in order to confirm findings of criteria's interlocking relationship and also because Rutgers site revamped its Web site in summer 2004. The first stage was in February/March 2004 with eleven subjects (five from Rutgers and six from Queens), and the second stage was in September/October 2004 (fifteen subjects from each institution).

There were nine tasks in the experiments (see Appendix B). These tasks were representative of typical uses of a library's Web site, including three tasks of locating known items, four using electronic databases, and two locating information. Each subject was asked to search both sites with the sequence alternated. The purpose of asking subjects to search an unfamiliar site is to measure learnability of the new site. The transactions were videotaped and logged by software. Subjects were encouraged to think aloud. A pre-test questionnaire was conducted to gather demographic information (see Appendix A). Following the experiments, a post-test questionnaire and interviews were administered (see Appendix C).

Findings

Interlocking Relationships

The study found the existence of interlocking relationships among effectiveness, efficiency, and satisfaction. The findings were determined by running ANOVAs between effectiveness (i.e., correctness of answers) and satisfaction, Pearson Product-Moment Correlation Coefficients between efficiency (i.e., time and steps) and satisfaction, and ANOVAs between effectiveness and efficiency.¹⁶ The study found:

- participants were less satisfied with the system when they failed to perform the tasks correctly;
- the greater the number of steps involved in completing a task, the lower the satisfaction expressed by the subject;
- the longer the time spent completing a task, the lower the satisfaction expressed by the subject;

- incorrect answers took more steps/longer time, while correct answers took fewer steps/shorter time. (This means that when the subject knew how to locate the answer, he/she took fewer steps and needed less time. Otherwise, the subject took more steps and spent more time trying to answer the question.)

Two prior studies discussed the relationships among effectiveness, efficiency, and satisfaction. The study of Frøkjær, Hertzum, and Hornbæk found that effectiveness and efficiency are either not correlated or correlated so weakly that the correlation is negligible for all practical purposes.¹⁷ The study of Walker et al. found user satisfaction is not determined by efficiency.¹⁸ The present study found the effect sizes range from medium to strong.¹⁹ In order to confirm findings, the experiments were repeated using different subjects and conducted at another time again. This data triangulation across time, space, and persons helps to establish factual accuracy.

Although this study found interlocking relationships among effectiveness, efficiency, and satisfaction, it should be noted that each criterion has its own emphasis and should be measured separately. One cannot replace the other.

Performance Data

It has been noted by prior researchers that the lack of benchmarks in digital library assessment is a problem. How do we know if our system is well implemented when there are not sufficient performance data from similar systems to compare? This study contributes to the literature the performance data of typical library uses such as locating a book, locating a journal, locating articles using electronic databases, and locating information such as connecting from home and interlibrary loan privilege.²⁰ Table 1 compares effectiveness tests at several institutions. Effective testing measures the number of tasks that participants complete correctly. The data of University of the Pacific was reported by Krueger, Ray, and Knight²¹ and the data of University of Illinois at Chicago was reported by Augustine and Greene.²²

Table 1. Results of Effectiveness Test

Function	U. of the Pacific	U. of Illinois at Chicago	Rutgers (Stage 1)	Rutgers (Stage 2)	Queens College (Stage 1)	Queens College (Stage 2)
Locate a book	91%		80%	100%	83%	100%
Locate a journal	50%	58%	100%	80%	83%	93%
Locate instructions on remote access	58%		100%	100%	100%	100%
Use of database		75%	93%	62%	83%	84%

Table 2 compares the average time used in locating a journal at the University of Illinois at Chicago, Rutgers, and Queens College. Table 3 compares the average number of steps required at these three institutions.

Table 2. Results of Efficiency Test in Terms of Time

Function	U. of Illinois at Chicago	Rutgers (Stage 1)	Rutgers (Stage 2)	Queens (Stage 1)	Queens (Stage 2)
Locate a journal	1 min. 48 sec.	1 min. 9 sec.	1 min. 39 sec.	1 min. 5 sec.	1 min. 26 sec.

Table 3. Results of Efficiency Test in Terms of Steps

Function	U. of Illinois at Chicago	Rutgers (Stage 1)	Rutgers (Stage 2)	Queens (Stage 1)	Queens (Stage 2)
Locate a journal	11	5	7	6	6

Cross-Cultural Usability

The present study found that ethnic background does not have a statistically significant impact on performance. However, different ethnic groups seem to rate satisfaction differently, for instance, in the areas of ease of use, organization of information, and visual attractiveness.²³ In the satisfaction rating on ease of use, African-American participants expressed higher satisfaction than other ethnic groups with the Queens Library site. In terms of organization of information, African-American

participants also indicated significant higher satisfaction than other ethnic groups with the Queens Library site. This was also the case when we combined the ratings of both Rutgers and Queens Library sites. In terms of rating of visual attractiveness, White participants expressed higher satisfaction with the Queens site and both sites combined. Table 4 is a summary of statistical significance of ethnic background on various aspects of satisfaction. A checkmark indicates that it is statistically significant.

Table 4. Statistical Significance between Ethnic Background and Satisfaction

	Rutgers	Queens	Both
Ease of Use		√	
Organization		√	√
Terminology			
Attractiveness		√	√
Mistake Recovery			

The two test sites of this study serve faculty and students with a wide array of backgrounds. It is important to study the different attitudes and needs of those from different cultures. Barber and Badre coined the term “culturability,” indicating the merging of culture and usability. The basic premise is simple: No longer can issues of culture and usability remain separate in designing for the World Wide Web. What is user-friendly for one culture can be vastly different for another culture. The same premise is applicable in digital libraries which serve users with different ethnic backgrounds and cultures.

User Lostness

User lostness in digital libraries occurs when users cannot identify where they are, cannot return to previously visited information, cannot go to information believed to exist, or cannot remember the key points covered.²⁵ The present study found that half of the participants felt user lostness. A closer examination found that participants felt less lost on their home institution’s site but more frequently felt lost on the new site.²⁶ This number is lower than what reported by Theng, Mohd-Nasir, and Thimbleby for the ACM Digital Library, the Networked Computer Science Technical Reference Library, and the New Zealand Digital Library.²⁷ The qualitative data indicates that the reasons for user lostness are: (a) confusing structure of site design, (b) lack of “Back” button, (c) lack of appropriate button to start over, (d) difficulty of the particular task, and even (e) the participant’s level of confidence.

Terminology

The terminology used in an academic library’s Web site is often criticized by users. The degree to which users interact with the site depends on how well users understand the terminology displayed on the system interface. Librarians or system designers tend to assume too much about users’ library knowledge. Although this issue may be seen as a

library instruction issue that can be overcome by better user education, better labeling in the digital library is needed to enhance usability. As Hartson, Shivakumar, and Pérez-Quinones put it, “precise use of words in user interfaces is one of the utmost important design considerations for usability.”²⁸

The present study found that thirty-one percent of participants expressed various degrees of difficulty with the terminology used on both test sites. The concerns were centered on the assumption that users have a common sense of library terms, and the need users feel for better description/explanation of library jargons. Improvement suggestions from subjects include the provision of a glossary section or explanatory phrases.

Click Cost

McGillis and Toms noted that users are very reluctant to click on a link unless they are fairly certain they will discover what they are looking for.²⁹ The present study found that seventy-three percent of the participants declared that they expect the click(s) to lead them eventually to the correct answer. Users of library Web sites come to the site to look up information. They want to be able to get to the answer easily and rapidly. Each click should effectively take them closer to the information.

Users’ Criteria on Usability

The present study examines satisfaction in the areas of ease of use, organization of information, terminology, visual attractiveness, and mistake recovery. The instruments include Likert scales and an interview. The users’ comments are especially helpful in establishing those features most important to digital library users. In terms of ease of use, users expect the digital library to be intuitive, user friendly, and easy to get around with clear directions, an understandable description, and easy navigation. In terms of organization of information, users prefer the digital library to be simple, straightforward, logical, and easy to use with

common tasks placed upfront. For Web page terminology, users want to see the digital library or academic library Web site-use terms that are simple, straightforward, understandable, generic, clearly labeled, and understandable descriptions/explanations. In terms of visual attractiveness, users recommend appropriate graphics, color, and font that is readable and not too complicated. In terms of mistake recovery, users demand easy navigation, "Back" button, an easy way to start over, and a "Help" section.

Conclusions

The digital library is an information system accessed over a network that is organized and well-managed, and that supports the creation, use, and searching of digital objects. It is important that we recognize the digital library as a tool that supports the user's information search and that we remember that users are looking for an information system that is easy and intuitive to use.

Usability is a multidimensional construct that (a) covers inherent usability (the functional part) and apparent usability (the visual impression); (b) involves outcome, process, and task; and (c) is technical, cognitive, social, and design-oriented. It is impractical to examine all aspects of usability in one study. The model presented in this study covers the important criteria such as performance measures (effectiveness and efficiency), affect measure (satisfaction), and learnability. The methods include user-centered formal usability testing technique, questionnaires, interview, observation, think aloud, and log analysis. It is a cross-institutional usability study. Although the model and the instruments were tested on two academic libraries' Web sites, the model is applicable to other information systems. The specific tasks may be tailored to fit specific applications.

This research provides an evaluation model for academic digital libraries; provides performance data which may serve as benchmarks to compare with similar systems; demonstrates that there exist interlocking relationships among effectiveness, efficiency, and satisfaction; establishes operational criteria and strategies to measure effectiveness, efficiency, satisfaction, and learnability; identifies causes of user lostness; confirms click cost; identifies that ethnic background may affect satisfaction ratings; and identifies users' criteria for evaluating ease of use, organization, terminology, attractiveness, and mistake recovery. These

findings may help system designers to better design an academic digital library that is easy and intuitive to use, and allows users to locate information quickly and accurately.

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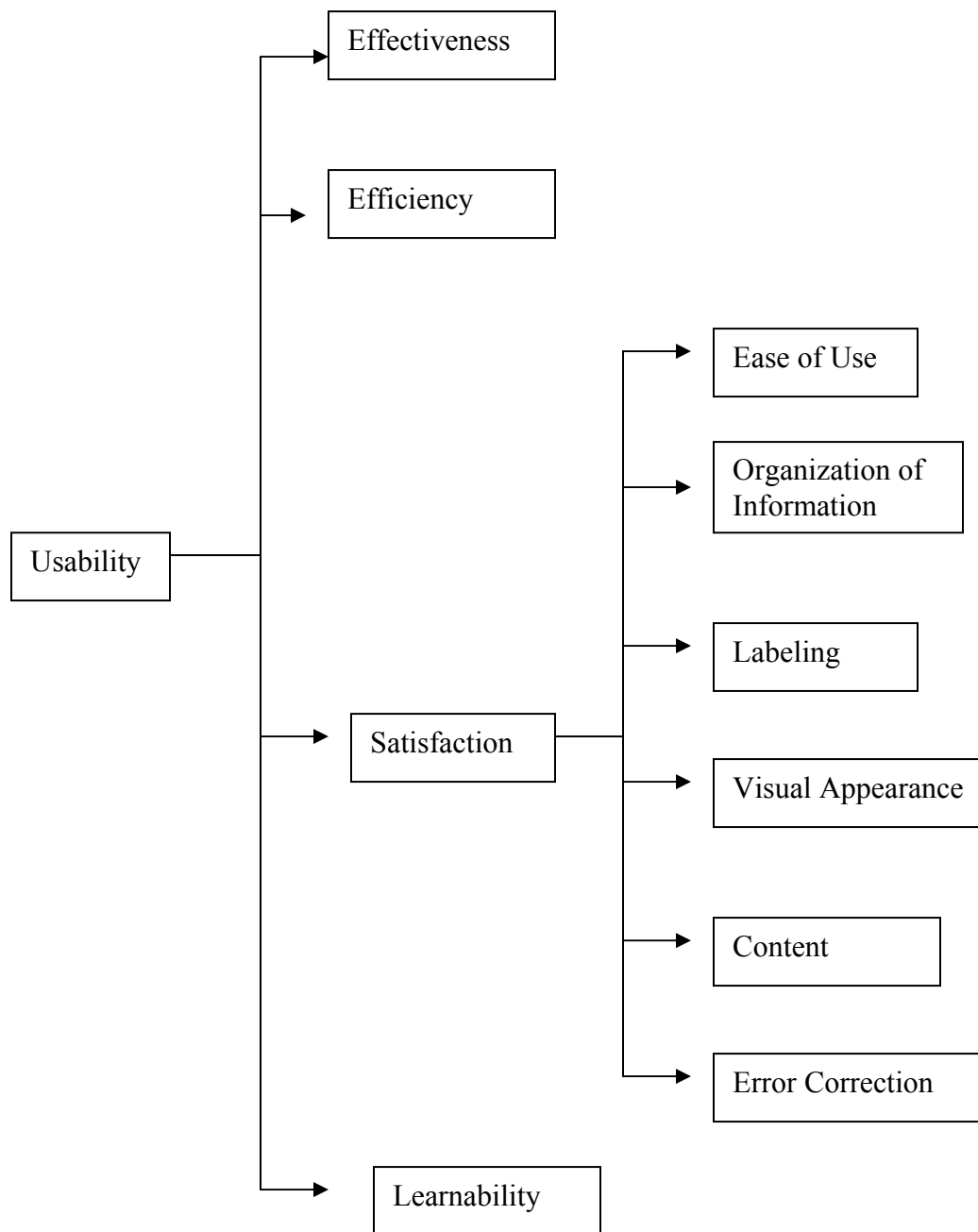
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Figure 2. A Model of Usability Evaluation for Digital Library

This study examines four important criteria of usability – effectiveness, efficiency, satisfaction, and learnability. The study found there exists an interlocking relationship.

Appendix A. Pre-Test Questionnaire

Thank you very much for agreeing to participate in this experiment. All of your personal data that we collect will be entirely confidential, viewed only by the experimenter, and shared only as part of group results. But first, we would like to gather a bit of background information about you, so that we will be better able to interpret your use of and reactions to the system.

Participant # _____

Date: _____

Gender: ____ Male ____ Female

Age: ____

What is your current status:

____ Undergraduate ____ Master's Student

____ Doctoral Student

Major/Department: _____

How many years have you been at Rutgers or Queens? _____

If you are from foreign country, how long have you been in the U.S.? _____ years

Your original nationality: _____

Ethnic group: ____ White ____ African American ____ Asian

____ Hispanic ____ Native American ____ Other: _____

How often do you use the Library's Web site:

____ Never used it

____ Once or twice a semester

____ Once or twice a month

____ Once or twice a week

____ Daily

Appendix B. Usability Testing Questions

The goal of this test is to evaluate the usability of the library's Web site. I will ask you a series of questions and would like you to think out loud while you look for the answer. Some questions are easy and some are more difficult. Do not worry if you can't find the answer every time. Please remember that we are testing the effectiveness of the site design and this is not a test of you. The whole test should take less than an hour. I thank you.

1. Does the library have a copy of *Gone with the Wind*, book format, by Margaret Mitchell?

Please rank from 1 to 5 regarding the ease of use of the system, 1 being the easiest and 5 being the most difficult.

1	2	3	4	5
Easy to use				Difficult to use

Your comment: _____

2. Does the library currently subscribe to paper copy of *Advertising Age*?

1	2	3	4	5
Easy to use				Difficult to use

Your comment: _____

3. Use a database to find an article about nursing homes and mental illness.

1	2	3	4	5
Easy to use				Difficult to use

Your comment: _____

Appendix B. Usability Testing Questions (continued)

- 4. Use a database to find a journal article on gospel music.**

1	2	3	4	5
Easy to use				Difficult to use

Your comment: _____

- 5. I am interested in investing in what are referred to as “callable securities.” Please use a database to find a recent article about them.**

1	2	3	4	5
Easy to use				Difficult to use

Your comment: _____

- 6. Find an encyclopedia article about French wine.**

1	2	3	4	5
Easy to use				Difficult to use

Your comment: _____

- 7. Find an e-book called “The story of mankind.”**

1	2	3	4	5
Easy to use				Difficult to use

Your comment: _____

Appendix C. Post-Test Questionnaire

Thanks again for participating in this experiment. This questionnaire gives you an opportunity to tell us your reactions to the system you used. Please circle a number on the scale to indicate your reactions. Please write comments to elaborate on your answers. I will go over your answers with you to make sure that I understand all of your responses. Thank you.

1. Please rate the ease of use of the Web site.

1	2	3	4	5
Easy				Difficult

Your comment: _____

2. What do you think about the organization of information on the site?

1	2	3	4	5
Clear				Unclear

Your comment: _____

3. What do you think about the terminology used in the site? Are categories clearly labeled?

1 2 3 4 5
 Clear Unclear

Your comment: _____

4. Is the site visually attractive?

1 2 3 4 5
Attractive Unattractive

Your comment:

5. What is the best feature(s) of the site?

1	2	3	4	5
Easy				Difficult

Your comment: _____

1	2	3	4	5
Satisfied				Unsatisfied

Your comment: _____

_____ Yes _____ No

Your comment: _____

_____ Yes _____ No

Your comment: _____

_____ Yes _____ No

Your comment: _____

All That Data: Finding Useful and Practical Ways to Combine Electronic Resource Usage Data from Multiple Sources

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Abstract

"Maximizing Library Investments in Digital Collections through Better Data Collection and Analysis (MaxData)" is a three-year research project sponsored by the Institute for Museum and Library Services (IMLS). The primary goal of the project is to provide cost and benefit information that will help librarians determine how best to capture, analyze, and interpret usage data for their electronic resources. The research team from the University of Tennessee Libraries is reviewing usage data from a number of sources, including vendors (COUNTER-compliant and non-compliant) and local sources such as link resolvers, federated search engines, proxy servers, and database logs. This paper will discuss several methods of combining vendor-supplied usage data with link resolver and metasearch statistical reports and data from a local system that measures database use.

To facilitate analyses and comparisons of usage data, it is helpful to combine different types of usage data into a single file or database. Data sources come in different formats (e.g., Microsoft *Excel*, HTML, XML, delimited files, plain text) and are not always consistent in the presentation of various data elements (e.g., ISSNs with and without hyphens). To reconcile these differences and achieve consistency and integration of the data, significant manipulations of the individual files may be necessary. These manipulations may be done manually or with computer programming. Manual approaches and programming solutions for extracting and manipulating these data will be compared in terms of time, effort, special skills,

software, and/or cost that each would require. Initial analysis to discover comparable data elements among the different sources will also be presented.

Acknowledgements

"Maximizing Library Investments in Digital Collections through Better Data Gathering and Analysis" (MaxData) is a three-year (2005-2007) research project funded by the Institute of Museum and Library Services and led by principal investigator Carol Tenopir.

Introduction

Academic libraries continue to increase their access to electronic resources in order to meet the needs of their faculty and students. Given the often significant costs of electronic resources, it is imperative that library staff be able to evaluate the usage of their electronic collections in order to manage costs while meeting users' demands, and to make decisions on retention, cancellations, and changes to the parameters of a subscription, among other things. Collecting, processing, and interpreting usage data is a challenge for libraries, big and small. A team of librarians at the University of Tennessee (UT) Libraries is currently participating in an Institute of Museum and Library Services (IMLS) grant project to evaluate various methods and sources of usage data collection and analysis and provide practical information for librarians to use when making decisions on how to manage their electronic resource assessment activities. This paper will discuss the various

sources, tasks, issues, and challenges involved in carrying out this research.

MaxData Research Project

The purpose of MaxData is to evaluate and compare several techniques for collecting and analyzing electronic resource use data, with the end goal of providing a cost benefit model that will assist librarians in determining what methods may be most practical and effective for their institution to use in evaluating their own usage of resources. The MaxData project has three teams working independently on different data collection and evaluation methods.

- Librarians at UT Libraries are collecting, merging, comparing, and evaluating usage data generated by its vendors (Project COUNTER), link resolver (SFX), federated search engine, proxy server, and database usage logs.
- Researchers at the Centre for Information Behaviour and the Evaluation of Research (Ciber) at the University College London are performing deep log analysis of electronic journal usage log data collected by the Ohio Library and Information Network (OhioLINK) library consortia.
- Researchers at UT and the University of North Carolina at Chapel Hill are conducting readership surveys of faculty and students at UT and several Ohio universities to investigate their journal reading patterns, preferences, motivations, and outcomes.

These three methods are vastly different in terms of both execution and outcomes. The MaxData project endeavors to assess the costs and benefits of each, and to provide a model with which librarians can learn what the limitations and strengths are of each technique, how the methods complement each other, and what types of conclusions can be drawn regarding the use of electronic resources.

The UT and Ciber teams are both working with usage log data, but from different sources and with different applications. UT's usage data are collected from vendors and fairly standard library systems (e.g., link resolver) that many libraries would employ, and are or will be used primarily for making collection management decisions for electronic resources. As noted later in this paper, our efforts to manage data collection and analysis activities involve basic programming and manual manipulation of data files. The results of this

research project will help us, as well as others, find more effective ways to manage usage data and make better use of the information they provide.

The Ciber team, on the other hand, has a huge amount of data collected from a system providing eighty-five institutions with access to more than 100 electronic databases, more than 6000 journal titles, and a variety of other electronic resources. Given that the e-journals are locally loaded on the OhioLINK servers, this collection of data is very consistent and very rich with information, and lends itself to treatment by the powerful, emerging deep log analysis methodology. These data logs can tell more than just how much a resource is used. They can also reveal much about users' searching styles and preferences, decay in article usage, and subnetwork usage (department/discipline of user), among other things. Clearly, this deep log analysis technique yields a wealth of interesting information, but it requires sophisticated software and analysis tools, and the ability to collect much more detailed data for analysis.

Vendor Data

In the past, vendors have been the primary source of usage data for electronic resources. Unfortunately, the data elements, report layouts, file formats, and reporting periods were inconsistent from one vendor to another, which made it somewhat difficult to obtain, process, interpret, and compare the data in many cases. Project COUNTER (www.projectcounter.org) was developed to provide standards for vendor-supplied usage data for electronic resources. One of the outcomes was to make it easier for libraries to analyze and compare data from different source vendors. While the COUNTER Code of Practice for Journals and Databases has been successful in guiding vendors in generating and presenting usage data, libraries may still need to reformat the data in some COUNTER reports in order to compare data among vendors. Commercial vendors such as ScholarlyStats (www.scholarlystats.com) and the NISO Standardized Usage Statistics Harvesting Initiative (SUSHI; www.niso.org/committees/SUSHI/SUSHI_comm.html) are developing automated systems that can facilitate the combination and comparison of COUNTER reports from different vendors, thus easing the burden on libraries to prepare data for analysis as described below.

In this research project, the COUNTER Journal Report 1 (JR1, Number of Successful Full-Text

Article Requests by Month and Journal) for each of UT's vendors has been manually added to a large Microsoft *Excel* spreadsheet for further study. In this aggregated file, it was clear that there were inconsistencies in how several data elements were recorded. This is problematic when trying to sort or merge data by these fields. For example, some vendors include extra information in the Journal Title field, such as publication or subscriber information, which must be removed manually or using an *Excel* string function. Journal titles are sometimes presented in all uppercase letters, and sometimes in standard title capitalization format with upper and lower case. Leading articles are

positioned differently, sometimes as the first word in the title and sometimes at the end following a comma. In the case of the article, a leading "The" causes titles to sort with the "Ts" rather than with the second word in the title, which is standard in title sorting. Standardizing the Journal Title for sorting in an *Excel* spreadsheet can be accomplished by doing the following:

- Insert a new Journal Title column.
- Use the following function to remove any leading articles and convert the Journal Title to uppercase:

```
=IF(LEFT(title-cell,4)="THE ",UPPER(CONCATENATE(RIGHT(title-cell,LEN(title-cell)-4)," THE")),UPPER title-cell))
```

- Select and Copy all of the newly formatted Journal Titles and perform a Paste Special Values, so that the values, not the formulas, are saved. The original Journal Title column may then be deleted, if desired.
- Repeat the process for other articles, as necessary.

The ISSN field is commonly used to link vendor data to other sources of data, such as information from the local integrated library system acquisitions module or electronic resource management (ERM) system module. The COUNTER data definition for ISSN states that it consists of up to thirteen

characters. There is no mention of a hyphen in the format; however, the examples given in the Code of Practice have ISSNs in the "xxxx-xxxx" format. Care must be taken with an ISSN without a hyphen when importing a CSV file into an *Excel* spreadsheet. If the ISSN field is not imported as "text," then it may be interpreted as a number and any leading zeroes will be removed. Once the CSV file has been imported into *Excel* with the 8-character ISSN field, the following steps may be used to convert it to the format with the hyphen:

- Insert a new ISSN column.
- Use the following function to convert to the hyphenated format:

```
=IF (LEN(ISSN-cell)>0,CONCATENATE(MID(ISSN-cell,1,4),"-",MID(ISSN-cell,5,4)),"")
```

- Select and Copy all of the newly formatted ISSNs and perform a Paste Special Values, so that the values, not the formulas, are saved. The original ISSN column may then be deleted, if desired.

Some vendors will include several COUNTER reports within a single contiguous spreadsheet. After any reformatting of the data fields, the COUNTER JR1 data must be manually separated from the other reports' data in order to combine it with COUNTER JR1 data from other vendors.

Consolidating COUNTER JR1 reports from different vendors into a single *Excel* spreadsheet facilitates several types of additional analyses, especially when combined with data from other

sources. For instance, when the consolidated vendor data file is augmented with price information, cost per use may be calculated, which may help determine the value of a resource relative to cost. Adding subject headings for each journal title may provide a picture of the use of resources by discipline. Sorting the resulting expanded file by fields such as Total Downloads, Subject, and/or Cost per Use, can provide valuable information for decision-making with respect to subscription retention or modification.

Link Resolver Data

The reports generated from link resolver software are a rich source of electronic resource usage data. SFX from Ex Libris comes with a statistical module

that can be used to create a number of different queries that measure how library patrons are using the linking service to access electronic full-text journal articles. One report in particular, listing requests and clickthroughs by journal and target, is somewhat analogous to the COUNTER JR1 report as a way to measure the use of specific online journals. A look at the SFX report in more detail is in order here. When searching within a database that is an SFX "source" (i.e., is configured to create an OpenURL for an article citation), each time a user chooses an SFX link, a menu screen appears with a number of options for full-text, and links to available electronic journals appear at the top of the list. If the request is for a journal that is available from more than one journal package (also referred to as an SFX "target"), each will appear as a separate link on the menu screen. At this point, SFX records a number of statistical elements, including the source database, the journal name and ISSN. Each target that appears on the SFX menu is attributed with one SFX "request" for that journal. When the user goes on to access one of the electronic full-text options on the menu screen, SFX records a "clickthrough" for the journal in the specific target that was chosen. For example, a UT student searching in a database discovers an article of interest and clicks on the FindText button (UT's name for the SFX linking service). The article in the journal of interest, *Journal A*, is available in two SFX targets, Package Y and Package Z. This information is presented on the FindText menu screen and one SFX request is recorded for *Journal A* in Package Y, and one for *Journal A* in Package Z. If the user goes on to click on the Package Y link to access the full-text, a clickthrough is recorded for *Journal A* in Package Y.

The SFX statistical module includes a query to pull out the number of requests and clickthroughs for each electronic journal contained in each SFX target. The resulting report is organized by target; the name of each journal package is followed by a list of journals within that package with the number of requests and clickthroughs for each particular journal. The time periods covered in the SFX statistical queries may be set by the library.

The clickthroughs recorded in the SFX report are somewhat less specific than the full-text article requests provided in the COUNTER report, as the measurement is of the number of times a user expresses an interest in full-text from a particular journal in a particular package, rather than the actual download of a full-text article. Additionally,

once the user has navigated to a journal via SFX and the clickthrough has been recorded, further actions within the journal and package in question, e.g., browsing, searching, or downloading of additional articles, are not recorded. The advantage of the SFX data, however, is the surety that the same user action is being compared. That is, no matter what the journal package, a clickthrough statistic means that the user has chosen a link to a full-text journal from an SFX menu screen. In contrast, there are a variety of user actions, depending on the journal package and interface, which can result in a COUNTER JR1 download statistic being recorded. Examples include accessing full-text articles by searching within a journal package or by following linked references.

Running the SFX "requests and clickthroughs per journal by target" report on a monthly basis has the potential to provide a useful supplement to the COUNTER JR1 reports. SFX provides data on use of a number of journal packages for which COUNTER statistics are not available, including open access journals from services such as PubMed Central. In addition, because journal backfiles are distinguished from current/regular subscriptions in the SFX database, libraries can ascertain the use of these extra-cost packages from the SFX clickthrough data. While the two systems are not measuring exactly the same thing, the monthly SFX clickthrough numbers can be compared with the full-text download numbers in the COUNTER JR1 reports to look for similar trends and patterns in journal usage.

As with the combination of data from COUNTER reports from different vendors, preparing monthly SFX data for comparison and analysis requires significant data manipulation. The SFX report is output in tab-delimited format that can be opened and manipulated in *Excel*. Information similar to the COUNTER JR1 report includes journal name, ISSN, the name of the SFX target, which can often be parsed into publisher and platform, and the request and clickthrough numbers that can be analyzed as a measurement of full-text usage. Unfortunately, the data are configured quite differently than in the COUNTER report, with the SFX target listed once, followed by the list of journals, rather than the publisher and platform being repeated with each journal name. ISSN and journal name are listed in one data cell; the next two cells in the row are the request and clickthrough numbers. There are blank rows separating each journal row in the list; each journal

list associated with an SFX target is separated by totals for that target. It is possible, with a number of copy and paste operations, deletion of blank rows, and splitting of the ISSN and journal name cell, to manually create a COUNTER JR1-type (i.e., similarly formatted) data file from the SFX report. This is a lengthy and time-consuming process though, and leaves the merging of data from one month to the next to yet another set of data manipulations. Several other avenues for this process look more promising.

One possibility for creating a COUNTER JR1-type report is for the link resolver software vendor to take care of it. In the case of SFX, such an enhancement to the statistical query module has been proposed. Another potential solution would be for the import of link resolver data to be included in an ERM. As ERMs are being enhanced to incorporate COUNTER usage statistics, the software vendors (who are often developing both an ERM system and link resolver software) should consider providing the ability to import statistical information from link resolvers also. One other possibility that is being studied at the UT Libraries is a programming solution for bringing together usage data from COUNTER-compliant vendors with request and clickthrough data from SFX. This solution would likely take advantage of another initiative already in place that uses exports from SFX, along with PHP/MySQL programming, to create a searchable A-Z list of electronic journals. Another PHP program could be designed to add statistical data to this list of electronic journals. Different libraries will approach these types of data manipulations in a variety of ways. The best approach for a library will depend on such things as the staff and level of programming expertise that is available.

Several other reports that are part of the standard statistical queries in SFX may also be useful for librarians in determining the usage of electronic resources. For example, the "Number of requests and clickthroughs per source" report gives a picture of the indexing and abstracting databases where searches are resulting in requests for full-text articles. "Journals requested but have no full-text" reports the journals where users are looking for full-text but not finding an electronic version. Another indication of an unmet user need for electronic full-text is the number of times a user goes to the interlibrary loan link on the SFX menu screen (the clickthrough number for the interlibrary loan target) to request an article.

Librarians can also use SFX statistics to analyze some of the subscription choices they have for electronic full-text and which of these choices might best meet users' needs. In combination with the options mentioned above for determining unmet user needs for electronic full-text, coverage dates listed in the SFX database can help to determine if perhaps the library should consider a different subscription with more complete coverage or the purchase of journal backfiles. Conversely, some SFX reports indicate which journal packages, or specific titles within packages, may *not* be needed. For example, the "Unused full-text" report lists the electronic full-text journals that have not been requested, and overlap reports can be generated to examine duplication between packages.

One more type of information in the SFX database that may be useful is the subjects assigned to journal titles. The subject categories can be used as is or mapped to local subject headings to assist in collection development analysis and decision-making.

Up to this point, we have been discussing usage data at the journal title level. Another avenue for investigation of electronic resource usage is data that describe use of whole journal packages. One way to look at use at the package level is to simply total the full-text download numbers for all journals in the COUNTER JR1 reports, or the clickthrough numbers in the SFX clickthrough reports. These totals are an indicator of full-text usage, and combined with price data, may reflect the relative value of various full-text journal packages. Other reports provide a look at user behaviors other than accessing full-text. For example, the Project COUNTER Database Report 1 gives the number of searches and sessions at the package level. As with the COUNTER JR1 report, different user interfaces will result in a variety of different user behaviors that are counted as either searches or sessions. Some libraries have devised local methods of measuring database use so that the same user behavior is measured for each package.

At the UT Libraries, a system was implemented in 1999 that records database "hits" via a locally developed Perl script that writes to a MySQL database each time a user clicks on a link from one of the database menu pages. The data, collected monthly in tab-delimited format, include date and time, domain name (e.g., lib.utk.edu, comcast.net), database ID, referring URL, and browser. For the past several years, analysis of these data using SAS software has helped to fill in gaps where vendor-

supplied data on database use were incomplete or missing altogether. Note that these data elements provide information only as to whether a user attempted to begin a session in a particular database. They do not reflect whether the user successfully got into the database, how long the session lasted, or what searching, viewing, or downloading activity took place. They also do not include access to full-text journal packages that are not listed on the database menu. As with the SFX clickthroughs for journal articles, this method of collecting database use data, though limited, is consistent in counting every user action in an identical manner, no matter which database was accessed. Other libraries have devised methods for using proxy server logs to make the same type of consistent local measurement of database use.

Lastly, one more source of package-level data is statistics generated by a federated search system. At the UT Libraries, the number of searches done in each database in the MetaLib system is being recorded. The usefulness of this statistic is rather limited, as it measures the number of searches within the databases, and only those searches that are done within the metasearch system. Still, it can add to the total picture of user activity in relation to the library's electronic resources and systems.

Summary and Conclusions

Our work investigating various methods of collecting, processing, and interpreting usage data from vendors and local library systems continues. We have faced challenges and made interesting discoveries in our research. Our biggest task to date was thoroughly reviewing the COUNTER JR1 reports, and pulling all of our JR1 data for 2005 into one *Excel* spreadsheet to provide views such as the distribution of full-text use by title and duplication of titles among packages. What was clear immediately was that even with the COUNTER standards, there were still enough inconsistencies in the reports to make the overall review and aggregation of the data very time consuming and difficult. A product like ScholarlyStats most likely would make this effort unnecessary or less burdensome, but at a cost. This is just one of many decisions that librarians may have to make when deciding how to handle vendor data. Does the value of the resulting data justify the time, effort, and cost that were required to acquire the data?

The data collected from a link resolver system show great promise. Numerous reports are available from SFX that could help create an

enhanced picture of electronic journal usage, including what we need that we don't have, and what we have that we don't need. The formats of the reports present challenges for merging together data from different time periods, say each month for a year, and creating an aggregated file similar to our COUNTER data file. In the absence of a more analysis-friendly report format from the vendor, or the ability to import the data through an ERM, the solution to reformatting the clickthrough or other reports and possibly combining them with the COUNTER JR1 data will likely involve programming of some kind. We are fairly certain that once the SFX data preparation issues are ironed out, the data will be a valuable component in our ongoing electronic journal usage assessment activities.

Our process for collecting, processing, and analyzing database usage (all types of databases) is well-established and allows us to review the use of our databases each year with relatively little time and effort. The most time-consuming part is checking each monthly log file in *Excel* to make sure it is clean and complete before reading it into the SAS data file. While limited to measuring attempted sessions, this system has been helpful in the past in making cancellation decisions and determining a more realistic number of simultaneous users for a database. The use of SAS has enabled us to look at frequency of use by title, time periods, location (on or off campus, wireless network), and category/type of database, among other things. We have also been able to merge in cost data for the databases and calculate a cost per session indicator to help determine the value of the databases relative to their cost.

What should be pretty clear by now is that usage data review is critical for libraries to manage their electronic resources, but it also is a difficult issue that does not have easy answers. No matter what approach is taken, time will be a factor. We know from a recent survey that we sent to electronic resources librarians at more than 300 research libraries, that many libraries do not do as much with usage data as they would like because they just do not have the time to deal with it.

The information we glean from this research effort, in concert with the deep log analysis and readership survey research, will give collection development and electronic resource librarians the information and tools they need to make informed decisions on the most practical and effective ways to manage their electronic resource usage

assessments in the future.

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Contingent Valuation of Libraries

Including Examples from Academic, Public, and Special Libraries

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Abstract

Contingent valuation is an economic method used to estimate the benefits of a non-priced good or service by examining the implication of not having the product or service. We have used contingent value analysis in studies of the usefulness and value of public, academic, and special libraries, and the services they provide. This article will summarize the methods we have used and the results we have discovered through this analysis. Our studies show that in the absence of libraries and library collections, it would require significantly higher amounts of time and money for users to accomplish the same amount of activity.

Introduction

Libraries have the problem that most services are not offered in exchange for money. This is a problem because the value of most goods and services in our society can be measured by the amount someone is willing to pay to obtain them (i.e., the cost). With reliable cost data, we could compare the value of library services to alternative goods or services.

The method that we have used to value the goods and services provided by a library is called contingent valuation. This is an economic method used to estimate the benefits of a non-priced good or service by examining the implication of not having the product or service.¹ By asking people what they would do if the library did not exist, we can examine the options they would take and put a value on their actions.

We have used this method to determine the value of a library system to its surrounding local community, and we have also used contingent valuation to establish the value of a particular service provided by the library to the parent organization. We calculate net benefits by first asking about the costs associated with using the library or library service during the last visit to the library. Then we ask about the cost of the alternatives that could have been used to obtain the

information. Costs incurred by the user while fulfilling their information need are subtracted from the costs to use alternatives.

For our public library surveys, we also examined the role that the library plays in the local economy. For these studies, there is a second part to the benefit calculation. This includes all the other benefits to the local economy of having a public library such as the salaries and wages paid to library employees, goods and services purchased from local vendors, and the effect on other local businesses by having the library as a destination drawing people to a community or business district. People often mention the “intangible” benefits of having a public library: for instance, that having a library is a symbol of our culture, or that libraries promote democracy by providing free access to materials. We have not found any good way of quantifying these intangibles, so our estimates will be a lower bound of the value provided by libraries.

The results of these analyses provide us with the contingent valuation. We have extended the analysis further to provide return-on-investment ratios for public libraries in Florida² and Pennsylvania.³ We have also carried out this type of analysis in an academic library context, where the goal was to examine the implication of not having the electronic and print journal collection on the work of faculty.⁴ In all instances, the results have shown that it would require a significantly higher outlay of users’ time and money to accomplish the same tasks had the library or journal collection not been present.

This paper gives an overview of the methods used to calculate contingent valuation in a library context. We discuss how we designed the contingent value questions on the library questionnaires. We also review some key results from the recent studies of Pennsylvania public libraries and of the journal collection at the University of Pittsburgh.

Methods: Evaluating a Library System (Public Libraries in Pennsylvania)

A survey of library users must be carried out to begin contingent value analysis. It is necessary to identify a random sample of users to participate. Special consideration must be given to determine the size of the sample. For the public library surveys, we combined the results of two different survey techniques. First, we did a state-wide household telephone survey of adults aged eighteen and over. This random digit dial telephone survey resulted in 1,128 complete or partial interviews. In addition, we distributed paper copies of library surveys in nineteen libraries and their corresponding branches across the state. Library users were given space to fill out the surveys while at the library, or they could take a postage-paid envelope and return the survey to us at their convenience. This resulted in 2,614 completed surveys from across the state. We included instructions for library staff with the packages of surveys, in order that the surveys would be randomized as they were passed out.

In this and other recent surveys of public library users, we have designed certain questions specifically to allow us to do contingent value analysis. Our surveys generally use a critical incident⁵ method of questioning. This involves questions to trigger the respondent's memory of their last visit to a library, whether it was an in-person visit or via a remote Internet connection. We ask questions about what they did, how long they spent doing the tasks, what method they used to access materials, and questions about other outcomes of library use. After establishing a firm instance of use in the person's mind, we ask the first question about contingent valuation.⁶

Q: If there were no public library, what would you have done to address your information need? Would you have . . .

1. Not bothered to do anything
2. Needed the information but not known where else to go for it
3. Gotten the information from another source, such as a store or an academic library
4. Don't know/Refuse to answer

Note that since we are asking about the last use of the library, all of the following questions are asked in this context. Much of the contingent valuation analysis is based on the answer to this question. For example, in some instances, the

respondent would not choose to do anything at all or would not know where else to go and would therefore forego the information that could not be obtained in the absence of the library. In these cases, we use estimates that have already been given of the costs and time associated with using the library to put a value to them of the use of the goods or services.

If the respondent answers with the third response above, namely that they would have had to use an alternative source to get the information provided by the library, we follow up with the following series of three questions.

Q: Now I need to ask you about how much time and money you think would have been involved if you had to use that source. I just need your best estimate on these questions. First of all, how much time do you think it would have taken to use this other source?

Q: About how far would you have had to travel to use this other source?

Q: And how much do you think it would have cost you to use this other source? Please include renting or buying or other costs such as parking, public transportation, and any other expenses including would be involved.

The answers provided to these questions allow us to value the alternative source, and we assume that the library provided the information or service cheaper because the respondent did not choose the alternative source as the first choice for obtaining the information. In other words, we assume that the time and costs associated with use of the library will be less than the time and costs that would have been spent to use the alternative source. People usually chose the cheapest and least time-consuming source first.⁷ In terms of the benefit calculation, we calculate net benefit, so we take the total cost of using alternative sources and subtract the total cost of using the library.⁸

There are other variables that are important to collect. Some of these include the amount of time the user spent in the library, time spent getting to the library and the method used to get there. Basic demographic information is also necessary so that the data can be weighted or adjusted as needed. An estimate of the costs of the collection or overall library budget is important if any type of cost/benefit analysis is desired. This would include

an estimate of the cost of staff time spent processing, maintaining and training users about the collections.

Evaluating a Particular Department or Service (The University of Pittsburgh Print and Electronic Journal Collections)

It is important to note that contingent value analysis is different when looking only at a particular department or service or at the library in an institutional context. Within an institution, we can only look at what users would do without the library (or library service). For instance, at the University of Pittsburgh we asked about how faculty and staff would obtain the needed information if the library journal collection were not available. We ignore any impact that the presence of the library (or the library service) has outside of the institution. When we do the contingent value analysis for an entire community, such as for the public libraries in Pennsylvania, we look at the benefits which accrue to users of the library but we also add in the impact on the surrounding community of having the library. If there were no public libraries in Pennsylvania, local businesses would be affected to some extent, overall number of jobs may decline, etc. The distinction between these two types of analysis will become clearer when we share the results below.

The survey at the University of Pittsburgh was a journal readership survey sent to faculty and staff. For academic libraries, we surveyed all faculty with a campus e-mail box and sent them a paper copy of the survey and a follow-up reminder a few weeks later. Most questions dealt with the last article read as the critical incident, such as how the article was identified, where it was obtained, and how much time was spent identifying, obtaining and reading the article, etc.

For the contingent valuation of the library journal collection, we focused on responses in which the last article read was obtained from the library or by the library. For these readings we determined the average time spent browsing, searching or other ways in which the article was identified, and the time spent obtaining a print or electronic version of the article. We then asked the following sequence of questions.⁹

Q: Thinking back to the source of the article, where would you obtain the information if that source were not available?

1. I would not bother getting the information.

2. I would obtain the information from another source. (Please specify source)

Those who would use an alternate source to the library were then asked this follow-up question:

Q: In order to obtain the same information, if this source were not available, I would expect to spend _____ minutes of time and/or \$ _____. (If the answer is zero, enter "0" instead of leaving blank.)

Again, in terms of the benefit calculation, we calculate net benefit, so we take the total cost of using alternative sources and subtract the total cost of using the source from the library collection.

Methods: Measuring the Value of Users' Time

Another important aspect of the contingent valuation analysis is the determination of the value of the user's time. In order to calculate the true benefits provided by libraries, we often give respondents the option of answering in terms of monetary outlay and/or the amount of time they spent or would have spent obtaining the information. Many of the cost amounts in the analysis include estimates of the cost of users' time. The literature describing methods of calculating this value varies a great deal.¹⁰ The method that seemed to us the most appropriate to use was the average income of users.

Valuing Time for Users of Academic Libraries

In the academic library studies, an indicator of the cost for a faculty member's time was determined by using the average faculty salary plus an amount for University overhead. For the University of Pittsburgh, an average faculty salary plus the University overhead of 48% was the amount we used for yearly cost of a faculty member. From another study, we estimated that university faculty average about 2,200 hours of work per year; thus we were able to calculate an estimated hourly rate for each faculty member. This amounted to \$45.50 per hour.

Valuing Time for Users of the Public Libraries

For the public library study, the task was more complicated. Since the general population uses public libraries, the value of a user's time varies greatly. To narrow down the possibilities, we included a question about the purpose of use of the

library. The options were (1) Recreational; (2) Personal; (3) Educational—student; (4) Educational—teacher; (5) Work (except teachers). Then, using our demographic data, which included household and individual salaries and wages, we calculated an average salary for each group.¹¹ The calculations varied based on the type of group. For instance, we added a percentage of the salary on additionally for anyone in the work-related group, to account for work-related overhead. To obtain an hourly rate, we divided the average salary by 1,800 hours.¹² This value was used to calculate costs of time in all subsequent calculations.

Results from the Pennsylvania Public Library Study

The total estimated cost to use alternative sources to public libraries was found to be \$1,647 million. As a comparison, public library users currently spend \$683 million in their time and money to use public libraries. Thus, it would cost public library users *\$964 million* more to obtain needed or desired information if there were no public libraries (i.e., the net benefit).

Some information obtained from public libraries saves users time and money such as in performing work, making household repairs, or purchasing a product at a lower price. When such information is needed, but users do not know where else to go, they would lose the savings provided by such

information. Library users would lose *\$84 million* by not knowing where to go to obtain needed information.

In addition to extensive additional costs to users, the local economy would lose as well since the library staff wages and salaries are lost to the economy and in-state library purchases of materials and other goods and services are lost as well. The value of library wages and salaries lost to the economy is *\$180 million*. We calculated that library in-state purchases lost to the economy amount to *\$68 million*.

The public libraries also offer gift shops, vending machines, copying machines, and other services that are operated by non-library vendors and others. The revenue of these services would also be lost to the local communities if the library ceased to exist. The extent of this loss to the economy is *\$1 million*.

Library visitors often use nearby local shops, restaurants, and other services before or after their trip to the library. Some revenue to these services (i.e., a “halo” effect) would be lost if there were no public libraries. Based on a study in the UK,¹³ about 23% of the total revenue is likely to be lost to the local communities. The lost “halo” effect is estimated to be *\$80 million*.

This information is summarized in the table below.

For Users of Pennsylvania Public Libraries	Cost
Estimated cost of using alternative sources	\$1,647 million
Estimated time and money cost of using the public library	\$683 million
Net benefit to users of using public library	\$964 million
Information that would not be obtained because users did not know where to go to find it	\$84 million
Lost benefits to the community if there were no public library: - Lost salaries and wages - Lost purchases to local vendors - Lost revenue from library shops, etc - Lost “halo” effect Total benefits that would be lost to the local community	- \$180 million - \$68 million - \$1 million - \$80 million \$329 million
Total net benefit of having public libraries	\$1,377 million

If there were no public libraries in Pennsylvania, the total economic loss to users and the local economy is estimated to be \$1,377 million. Pennsylvania taxpayers contribute \$249 million to public libraries through local, state and federal taxes. Thus, the Pennsylvania taxpayers’ return on investment (ROI) in public libraries is **5.5 to 1** ($\$1,377 \div \$249$ million).

University of Pittsburgh Journal Collection Study

As we suggested above, when doing contingent valuation analysis for an institution, the analysis has some important differences. When calculating the benefits, it is important to distinguish between two types. There are benefits that accrue to the users of the institution from using the library resources. In addition, the institution benefits from the presence of the library, but these benefits must be lowered by the costs of creating and maintaining the library. These two sets of benefits are described below for the University of Pittsburgh journal collection.

Results of the contingent valuation for the University of Pittsburgh journal collections suggests that faculty would require 250,000 more hours, i.e., 114 Full Time Equivalents, at a salary and additional overhead cost of \$45.50 per hour and an additional \$2.1 million to use alternative sources, if the library journal collection was not available. This is the net benefit to the user, and is valued at \$13.48 million.

The approximate cost of purchasing and processing the journal collection allocated to faculty reading is \$1.87 million. The faculty cost of using the collection is \$1.56 million. Based on the results of the analysis, if there were no library journal collection the University would have to pay an additional \$11.61 million for these activities to be carried out. The benefits to the University are lower because they are the ones responsible for purchasing and maintaining the current library collection.

A summary of this analysis is shown in the box below.

University of Pittsburgh Journal Collection	Dollars (millions)
Estimated cost of using alternative sources	\$15.04 million
The faculty cost of using the library collection	\$1.56 million
The allocated cost of purchasing and processing and providing the collection	\$1.87 million
Total allocated costs of purchasing, processing and using the collection	\$3.43 million
Net benefit to the University Faculty of the library journal collections	\$13.48 million (\$2.1 million in additional costs plus 250,000 hours of additional time)
Net Benefit to the University of faculty using the Library Collection (Cost of using alternatives minus total costs of current collection)	\$11.61 million

In terms of a cost/benefit analysis, if there were no university library journal collection, it would cost the university about **4.38 times** the cost of the current journal collection in faculty time and other expenditures ($15.04 \div 3.43$) for the same amount of research and information gathering to be carried out.

Of interest is that the contingent valuation of other sources of articles is substantially less than that of the library journal collection. These other sources include personal subscriptions, articles sent by colleagues, author Web sites, etc. This suggests that articles found in the library are often the result of a specific search, whereas articles suggested by colleagues or read in personal subscriptions of journals are more for general interest and therefore have a lower value to the respondent.

Results from Special Libraries

The evaluation of contingent value in special libraries was done in a similar fashion to the academic library journal collection described above. Special libraries often exist solely for the sake of the employees of a business or government agency, so

the broader impacts on the surrounding community were not included in the analysis. Following a similar methodology to that explained above, analyses of contingent valuation were calculated for eighty-four special libraries. When analyzed as a group, it was found that the ratio of benefits to costs of all the services provided by these libraries was about 2.9 to 1.¹⁴

Conclusion

Contingent valuation analysis can help libraries justify their existence by quantifying the benefits they provide to society. This is traditionally something that has been difficult for libraries to do in any kind of concrete manner. It also allows a library to make comparisons with themselves or with an appropriate benchmark. The reader must be cautioned against comparing contingent valuation or cost/benefit ratios of one library against others types of libraries. Public libraries provide benefits to the local economy, while academic and special libraries exist within a specific institutional context. Therefore, the ratios will often be higher for public libraries. Comparing the ratios

between these very different types of institutions is like comparing apples and oranges.

By asking library users what they would have done had the library not been available, we are able to put a dollar amount on the non-priced goods or service provided. This type of analysis has been done for public, academic, and special libraries. When comparing the value of the benefits provided by the library services to the costs of providing them, we consistently find ratios that are greater than one. For public libraries in Florida we found a benefit to cost ratio of 6.5 to one and for public libraries in Pennsylvania we found this ratio to be 5.5 to one. Specifically, at the University of Pittsburgh, the value of the print and electronic journal collection was 3.43 times the cost of the collection. For a group of eighty-four special libraries, we found a ratio of 2.9 to one.

Many studies gather qualitative evidence of the value of libraries through the use of focus groups, comment cards, user interviews and other techniques. Combining qualitative results of the value provided by libraries with these quantitative numbers creates convincing evidence of the value of a library to our society or to an organization such as a university, company or government agency.¹⁵

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Endnotes

1. Other studies that have used this technique in similar ways include the recent *Economic Impact Study* done at the Carnegie Library of Pittsburgh: Carnegie Mellon University Center for Economic Development; *Carnegie Library of Pittsburgh Community Impact and Benefits*, Center for Economic Development, Pittsburgh, PA, April 2006, <http://www.clpgh.org/about/economicimpact/>; and many studies by Glen E. Holt and Donald Elliott. See, for instance, Glen E. Holt and Donald Elliott, "Measuring Outcomes: Applying Cost-Benefit Analysis to Middle-Sized and Smaller Public Libraries," *Library Trends* 51, no.3 (2003): 424-440. There was a January 2005 study done for public libraries in the state of South Carolina by Daniel D. Barron et. al., <http://www.libsci.sc.edu/SCEIS/exsummary.pdf>.
2. Reports of the Florida study can be found at: <http://dlis.dos.state.fl.us/bld/roi/publications.cfm>
3. The Pennsylvania reports are forthcoming.
4. Donald W. King et al., *The Use and Outcomes of University Library Print and Electronic Journal Collections (at the University of Pittsburgh)*, 2004, Unpublished preprint.
5. Brenda Dervin, a professor at OSU, has developed a comprehensive strategy for using the critical incident to understand the last information need. Further information about her work can be found at: <http://communication.sbs.ohio-state.edu/sense-making/>. Our approach has things in common with this technique, but differs as we focus the questions on the last use of the library.
6. Note that the information need referred to in the question is the critical incident, or last use of the library, which is also the context for asking about the alternatives.
7. The cheapest and least time-consuming could also mean the source that the respondent is the most familiar with. The time spent learning to use a new source is already factored into this assumption.
8. The total user cost of using the library includes time to go to and from the library, time spent in the library, costs to drive and other costs (public transport, parking, etc.).
9. For the entire set of questions asked in the academic library survey at the University of Pittsburgh, please visit: http://web.utk.edu/~tenopir/research/survey_instruments.html.
10. Some of the articles that dealt with this topic are: Stephen Day Cauley, "The Time Price of Medical Care," *The Review of Economics and Statistics* 69 no. 1 (1987): 59-66 and Howard Marmorstein, Dhruv Grewal and Raymond P. H. Fishe, "The Value of Time Spent in Price-Comparison Shopping: Survey and Experimental Evidence," *The Journal of Consumer Research* 19, no. 1 (1992): 52-61.
11. It is important to note that we calculate these numbers separately for each study. This will account for differences in the cost of living among different areas.

12. 1,800 hours was calculated as follows: 40 hrs a week of work multiplied by 52 weeks equals 2,080 hours a year. We then adjusted for vacation, sick leave and holidays, and for the fact that some people work less than 40 hours a week (based on surveys we've done, a standard work week at a University can vary from 35 to 40 hours).
13. Jared Bryson and Bob Userwood, "Southwest Museums Archives and Libraries Council Social Impact Audit," Study funded by the Resource Council for Museums Archives and Libraries and research designed by the Centre for Public Libraries and Information in Society (CPLIS): University of Sheffield, 2002.
14. For more information about the special library analysis, please see: José-Marie Griffiths and Donald W. King, *Special Libraries: Increasing the Information Edge* (Washington, DC: Special Libraries Association, 1993).
15. Special thanks to José-Marie Griffiths, Janet Schlarb, Chris Tomer, Matt Herbison and Chris Briem for their help in preparing this research.

Web-Based Evaluation Instructional Systems: Design, Development, Issues, and Considerations

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Abstract

This paper details a long-term evolving effort to provide evaluation instruction designed to address specific information needs for selected target groups from a centralized location within a networked environment. Additionally, this paper examines a content design process that focuses on user-centered data-appropriate evaluation methods where the content of the instructional system is comprehensive, organized, and presented for use by library researchers and practitioners in a variety of library settings and situational contexts. Specific examples of Web-based evaluation instructional systems developed by the authors are reviewed and suggestions are offered for the future development of such systems.

Introduction

Web-based evaluation instructional systems can be effective library tools for identifying data sources and developing evaluation strategies.¹ As a tool, libraries can use these instructional systems to provide insights and direction on the most appropriate evaluation approach to find specific data needed to²:

- Address and answer stakeholder concerns;
- Meet stakeholder needs;
- Make decisions about library resources and services;
- Demonstrate the value of a library to

institutions, governing bodies, etc.;

- Assist a library to have a voice in the political environment; and
- Support the role of the library as a public good.

The development and implementation of Web-based instructional systems, however, must address issues related to the structure of and navigation within the system, and issues related to the content of the modules within the system.

As an analysis of an ongoing iterative learning process, this paper presents examples and examines selected issues and considerations related to the development and implementation of centralized Web-based evaluation instructional systems. In addition, this paper explores the opportunities that Web-based evaluation instructional systems provide for libraries in a networked environment and presents insights into the development of a current Web-based evaluation instructional system, drawing upon lessons learned from the design and implementation of prior Web-based evaluation instructional systems.

Evaluation Context

Research has shown that it is essential to match specific data needs to appropriate evaluation approaches in order to effectively address problems or issues.³ With growing numbers of library services and resources allocated to the networked

environment, library decision makers find it difficult at times to match data needs to appropriate evaluation approaches.⁴ Within the networked environment, identification and retrieval of sources of data may require use of specific software or programming. Data sources may need to be retrieved from a number of locations via electronic collection means, such as from a library or library system's databases, vendor supplied data, or state or national databases (e.g., National Center for Education Statistics (NCES)). In addition, library decision makers may increasingly need specific data sources to justify the continued use, usefulness, value, and impact of more traditionally supplied services and resources (i.e., a brick and mortar setting).⁵

These changes within library settings force library researchers and practitioners to re-think the use of evaluation approaches to meet specific data needs. Evaluation within the library setting must now include attempts to collect data capable of providing insights regarding the performance of library services and resources in both the traditional and the networked environments.⁶

This dual or changing library environment necessitates the selection of best-fit evaluation approaches. Best-fit evaluation approaches are those developed to meet data needs within specific library settings and contexts. Through a planning process, researchers match evaluation approaches to specific data needs to effectively and efficiently address questions regarding services and resources provided traditionally, electronically, or both. Some considerations in the selection of best-fit evaluation approaches include:

- Identification of types and applications of available evaluation approaches;
- Data types the evaluation approaches provide;
- Resources needed to conduct the evaluations and data collection;
- Effects of library settings and situational context on data type and collection; and
- Degree to which the data collected addresses questions related to the use, usefulness, value, and/or impacts of library services and use of resources within specific contexts and settings.

The need exists to bridge and link funding, service/resource delivery, and evaluation frameworks to reveal maximum value, impact, benefits, and quality to the institutions and communities that libraries serve. Taking a best-fit approach to evaluation can help to create these

bridges. The development and use of a centralized evaluation instructional system can help to identify best-fit approaches.⁷

Evaluation Instructional System Development and Design

Historically, when faced with a data need to address a problem or issue, the strategy employed by library researchers and practitioners was to identify available evaluation approaches, then adapt, develop, or adopt what could be a wide-ranging assortment of evaluation methods in attempts to meet data needs.⁸ The evaluation methods used may have initially been developed for use in libraries or may have evolved in other fields (i.e., business, education, etc.). These attempts to find and modify evaluation approaches may address specific data needs; however, the question to ask is how effectively the evaluation attempts to address, and the data collected address, a specific problem.⁹

Effective evaluation can provide data with the ability to describe and understand use, usefulness, value, and impacts of library services and resources. Poor evaluation, however, can provide results that range from wasting finite library resources and staff time to providing useless data that is incapable of answering questions about library services and use of resources.¹⁰

One approach to developing effective evaluation practices is the comprehensive presentation of evaluation approaches that include educational information on why, when, and how to conduct effective evaluation, and instructional information on the use of effective evaluation. Web-based instructional systems offer a means to provide a comprehensive presentation of evaluation approaches with strategies on how to link funding to service/resource delivery. These instructional systems function as comprehensive repositories presented from a centralized and readily accessible network environment that can provide library researchers and practitioners the means to:

- Develop custom evaluation strategies (from planning to implementation to dissemination) through the use of educational modules coupled with interactive templates;
- Match data needs to appropriate evaluation approaches within the strategies;
- Select and use appropriate evaluations matched to data needs;
- Compare and contrast available evaluation

approaches developed for specific library settings and situational contexts;

- Access and view evaluation approaches that have been applied within a library setting with suggestions and examples on how to adapt the approaches to meet specific data needs;
- Conduct evaluations by offering guidance for planning and templates for data collection efforts;
- Analyze data, prepare reports, and disseminate results;
- Locate additional online resources through links to other sources;
- Receive help and technical support for conducting evaluations; and
- Provide a dynamic forum for interaction that includes feedback and support from other researchers and practitioners.

Web-based systems are capable of providing the types of data needed as evidence of the extent to which a library meets institutional and local community needs and the needs of a diverse population of users within a library's community.

Web-based evaluation instructional systems offer an alternative to adapting or adopting evaluation approaches to meet data needs by providing a comprehensive presentation of readily available library evaluation approaches in a centralized Web environment. These systems are designed to address the following problem: "How can library managers, researchers, and practitioners better determine what type of evaluation approach will best meet the library's evaluation purposes and needs, given the library's current situational context (e.g. delivering impact, value, and benefits to communities and funding agencies)?"

Figure 1 demonstrates the role of Web-based evaluation instructional systems and their benefits for public libraries in the networked environment.

At the top of the figure, library situational factors are used to determine specific evaluation and data needs. Evaluation systems are centralized portals that present educational and instructional materials capable of developing best-fit evaluation approaches matched to data needs.

A portal can help guide library researchers and practitioners in beginning an evaluation process. The portal can also provide guidance and education about various evaluation instructional systems and their benefits, helping a library to select the evaluation approaches that best-fit its unique needs. Instructional systems, such as E-metrics, Outcomes Assessment, or Value/Return on Investment (ROI), can each provide specific forms of instruction to gather, interpret, and employ various forms of evaluation data, based on the needs of the individual library. Each instructional system employs specific methods and techniques.

Instructional modules then help libraries address issues such as user guidance, data analysis, and data interpretation, while instructional development tools provide instruments used for gathering and analyzing data. Instruction development tools include samples, such as survey questions, protocols, reports, spreadsheets, data entry/analysis, stories, and qualitative analysis. Tools also include templates for use in planning, data collection, and reporting efforts.

Instructional modules can provide an interactive interface for producing actual evaluation strategies as participants' complete phases of the learning and instructional process. These modules can also provide help features such as list-servs for information exchange with other module participants and e-mail, or chat-oriented technical support. Instructional modules offer additional support in the form of guidance, sample reports, and sample strategies for use of data and for advocacy efforts.

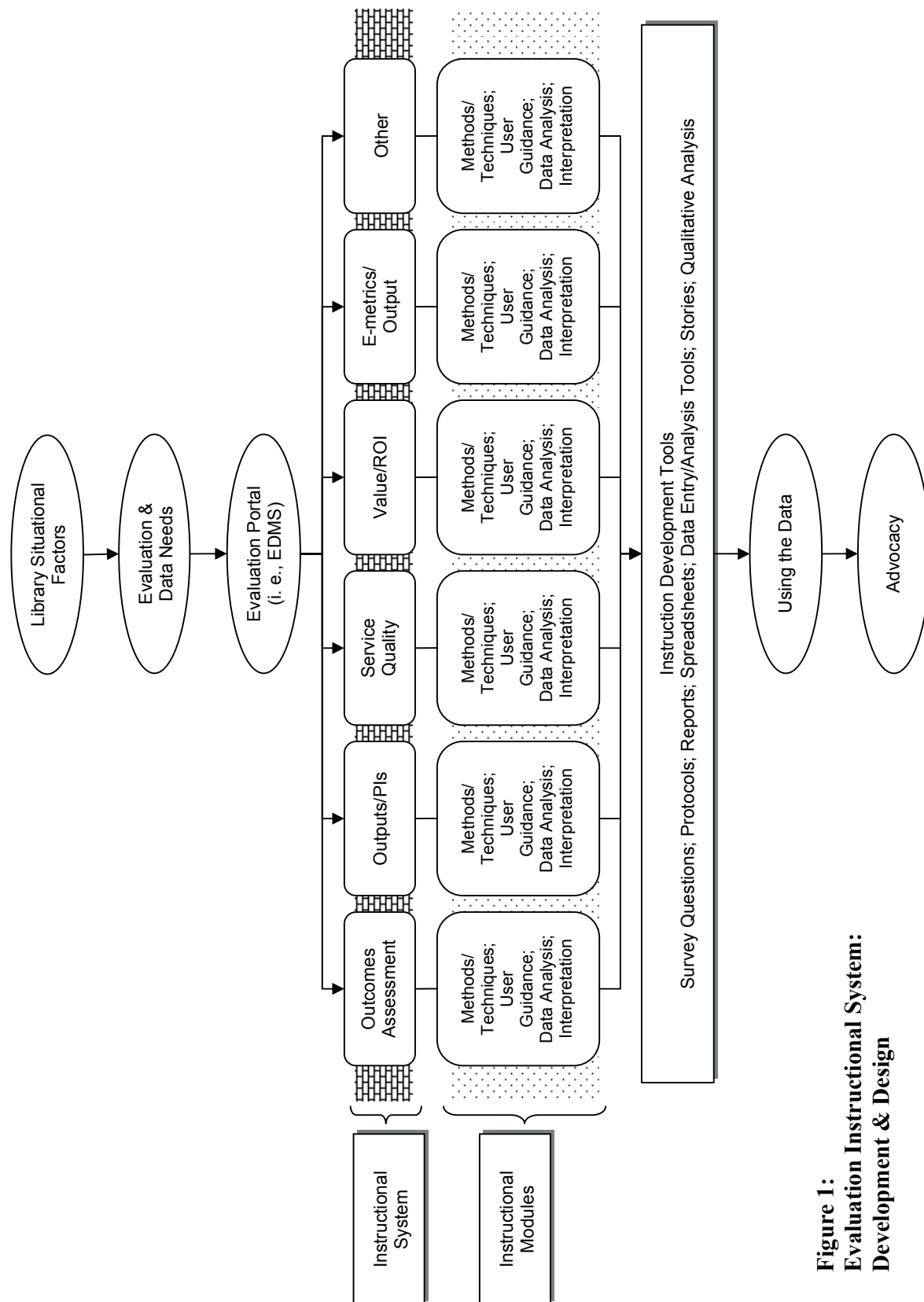


Figure 1:
Evaluation Instructional System:
Development & Design

Examples of Web-Based Evaluation Instructional Systems

The following overviews of three systems represent prior and ongoing development of evaluation instructional modules. Since 2002, the research team at the Information Institute at Florida State University has been involved in identifying and addressing issues in the design, development, implementation, and sustainability of the technical presentation of evaluation instructional systems, the content within the modules of the systems, and interactivity-related issues between users and the systems. In addition, the research team maintains, hosts, and regularly evaluates the E-metric system (EMIS) presented below as one of the examples.

Florida State Library Outcomes Training and Assessment Project (December 2002-January 2004)

The Florida State Library contracted with the research team to develop outcomes training systems on the development, use, and reporting of Library Services and Technology Act (LSTA) project outcomes. The Florida State Library received the primary grant from the Institute of Museum and Library Services (IMLS) for public and other libraries that receive LSTA grant funds. IMLS funded the project to serve as a national model for outcomes assessment of LSTA-based projects. The resulting system, the LSTA Toolkit, is available at <http://www.lstatoolkit.com/>.

The LSTA toolkit is designed to provide instruction to participants on filing standardized mid-year and annual reports to the Florida State Library via an interactive outcomes plan wizard. The toolkit provides participants with guidelines to:

- Plan an outcomes assessment approach;
- Conduct outcomes evaluation;
- Develop a data collection plan including suggested techniques and methodologies; and
- Report project progress.

The toolkit also provides links to reports and guidelines as additional aides in data analysis, and the system contains strategies for reporting project results to interested stakeholder groups.

In developing the system, the research team conducted a review of data collection tools from past Florida library LSTA grant files. The research team attempted to identify best practices in the use of data gathering tools and data gathering methodology for all types of LSTA-funded projects

by reviewing two years of actual project results (mid-year and annual reports). Results of the review showed that few evaluation tools or methodologies, if used at the local library level, were contained within the reports.

As a result of the review process, the research team developed a list of specific evaluation methodologies (i.e. outputs and performance measures) available for use to measure project outcomes, such as automation, technology training, literacy, and service to elders outcomes developed by grant recipients. Practical procedures were developed for library staff (i.e., LSTA grant recipients) to follow to integrate these tools into their data collection procedures. Descriptions and procedures included means of modifying the tools to fit local purposes, how to gather the data, who should gather the data, and how to record the data.

Following the review of the reports, the research team worked with a technology development team to assess the need for Web-based training materials and recommend an appropriate means to produce print and online training modules for library use. The recommendation included designing an interactive Web page. The result of the recommendation was the development and implementation of the LSTA Toolkit by the technology development team with consultation from the research team. The final product of the research project, the LSTA Toolkit is now housed on the Florida Department of State Division's server.

E-Metrics Instructional System: Librarian Education in Network Statistics (October 2002—March 2005)

The research team designed, developed, and implemented an E-Metrics Instructional System (EMIS). A National Leadership Grant in Education and Training from the Institute of Museum and Library Services (IMLS) provided funding for EMIS development and implementation. The EMIS instructional system is available at <http://www.ii.fsu.edu/emis/>.¹¹

The purpose for creating the EMIS Web-based evaluation system is to assist public librarians, state-library agency staff, and library consortia staff to better understand how to evaluate the use and users of their online library services and resources. Research demonstrated the need for a comprehensive e-metrics training program that:

- Described the relationship between a library's

(or state library agency/consortium) technology infrastructure and the e-metrics;

- Instructed librarians as to the intent and definitions of the e-metrics;
- Instructed librarians in the various methodologies and approaches for collecting e-metrics;
- Assisted libraries to develop a management and collection plan for e-metrics;
- Assisted libraries to develop in-house training programs to instruct staff in the collection and reporting of e-metrics; and
- Assisted in reporting network resources and services data for aggregation across public libraries.¹²

In particular, the research team created EMIS to provide understanding of the use of databases, digital reference services, and other selected services and resources.

Of the many e-metrics readily available for use in libraries (see <http://www.niso.org/emetrics>), EMIS presents recommended core e-metrics and provides training modules to make adoption easier, more standardized, and more effective. In addition to the recommended core e-metrics, there are a number of other standardized and field-tested e-metrics developed for specialized uses and included within the EMIS modules (i.e., detailed measurement of virtual reference services or e-metrics devoted to academic research libraries). The value of EMIS is not simply that it informs the library community as to the availability of selected e-metrics, but also that its training modules encompass the measurement lifecycle—from E-metric selection, data collection, log analysis, and data analysis, to use and presentation of data.

EMIS also provides other resources such as: the E-metrics catalog, a catalog of e-metrics that have been standardized and field tested to date for libraries; E-metric annual report templates, a collection of Microsoft Office templates and samples to assist in the creation of individualized E-metric Annual Reports; and the E-metrics resource list, a list of helpful resources related to e-metrics. As a part of the project, a range of instructional modules and workshops have been developed and presented around the United States. The Information Institute offers free local workshops in the use of the EMIS instructional system.

Evaluation Decision Management System (December 2005—July 2008)

In December 2005, the Information Institute received an IMLS grant to address the question, "How can "best practice" evaluation strategies support public librarians in demonstrating the value of their libraries to the communities that they serve?" This current project addresses IMLS National Leadership Grant program priorities of enhancing public services in support of learning by increasing the ability of libraries to better utilize resources in the overall evaluation of library services and programs.

The primary product of this research will be the Web-based evaluation decision management system (EDMS), which librarians and others can use to assist in selecting, using, analyzing, and reporting data from various evaluation approaches. The EDMS builds on the LSTA Toolkit and the EMIS systems. Once completed, this demonstration project will provide public librarians and managers with the following information:

- Overview of leading evaluative approaches that are used and are useful in a public library setting;
- Types of data each approach provides;
- How each data type helps describe specific library services, resources, and programs;
- Strengths and weaknesses of each approach;
- Success with which libraries have employed the different approaches;
- How situational factors within library settings affect the successful use and utility of these approaches; and
- Ways in which to engage in and use various evaluation strategies, analyze evaluation data, interpret evaluation results, and present evaluation findings for advocacy and management purposes.

The primary purpose of the current project is the provision of a Web-based means to select best-fit evaluation approaches matched to specific data needs based on unique situational factors and contexts at a local library level.

Figure 2 describes the current approach for developing the EDMS. There are two key components of the EDMS. The first component is an instructional system that can be accessed directly from the homepage without a log-in/authentication procedure. This component provides a set of

instructional modules that describe various evaluation approaches that compare and contrast the strengths of these approaches for specific evaluation situations.

The second component is an interactive problem solving approach that will require a log-in and authentication process so that previous work and outputs can be maintained for a specific library. This approach will automatically harvest Web-based library statistical data from the National Center for Educational Statistics, state library agencies, and other sources. These sources will provide a profile of available data for an individual library. The database in this component will allow users to query specific evaluation problems, manipulate available data (or add new/additional

library data if desired), and select the type of output desired from the database.

The framework shown in Figure 2 offers both description information as well as interactive customized data for a particular library and its particular evaluation needs. This framework will assist in developing the EDMS and will facilitate assessment research and education by library and information science scholars, assessment instruction in accredited library degree programs, and assessment activities in libraries at a national level. The project will also produce a number of workshops, seminars, and presentations to be held in selected cities to disseminate the findings from the study and introduce the library community to the EDMS developed as part of the study.

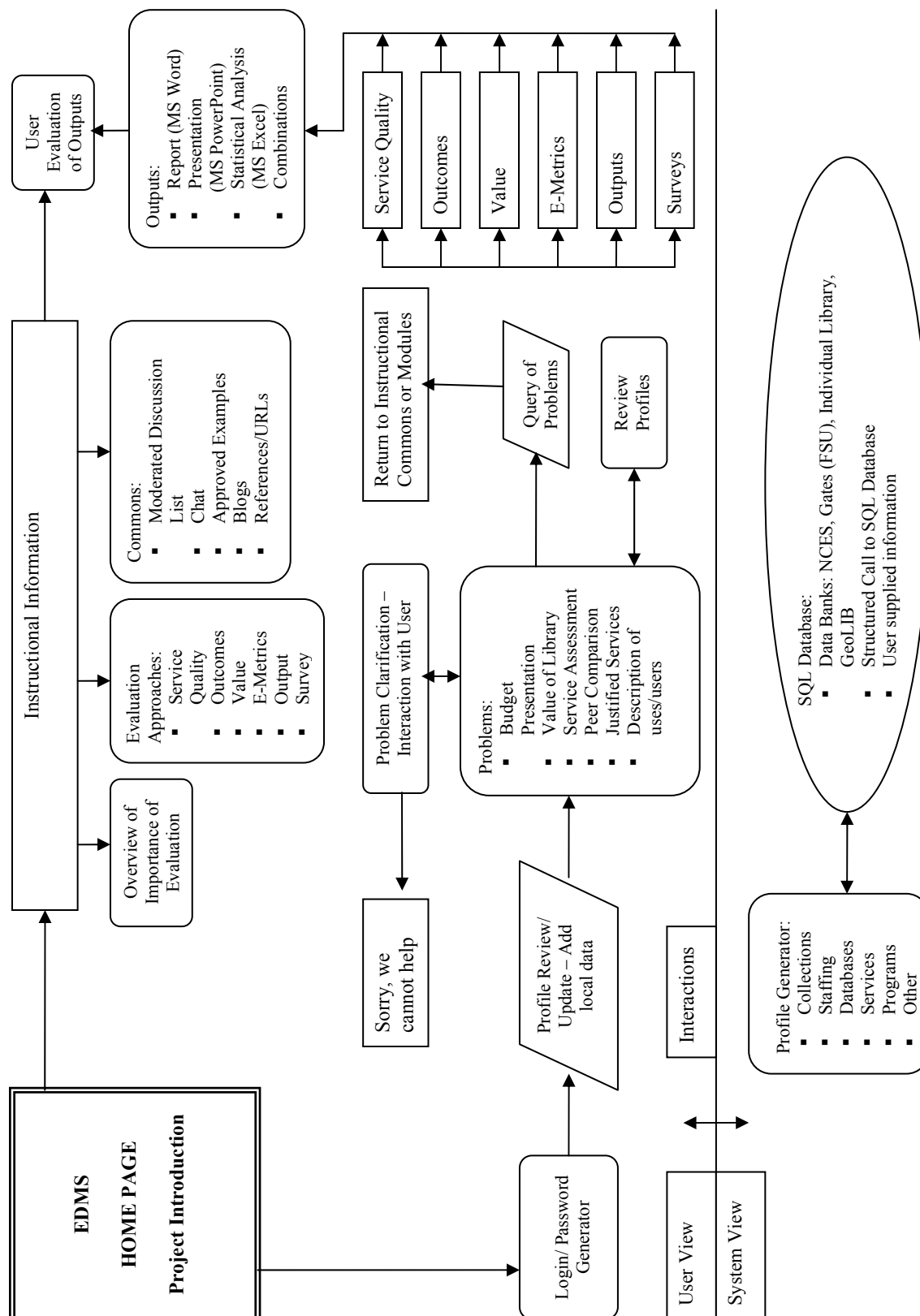


Figure 2: Overview of EDMS

Issues and Considerations

Developers of Web-based evaluation instructional systems face a number of issues and considerations as part of the design and implementation process beyond that of the presentation of evaluation approaches. Developers need to consider issues such as the anticipated audience, other stakeholders, perspective of the system, and presentation approach at entry into the system. In employing a comprehensive approach to developing an evaluation instructional system, system developers must consider relationships other than just evaluation content or the infrastructure created to deliver that content. Some key issues and considerations identified through a needs assessment of Advisory Board members and Project Partners of a current Web-based evaluation instructional system are presented below.

Targeted Audience

A content design process focused on comprehensive user-centered data-appropriate evaluation methods has to focus first on the users of the system, the targeted audience. Initial or early iterations of content and system design may have to be limited in scope based on:

- Broad levels of need in a library community;
- Factors that may affect evaluation within this community such as available resources (i.e., staff size, funds available);
- Skill level of participants to conduct the evaluations;
- Training needs to conduct the evaluations;
- Available time for researchers, practitioners, and support staff to conduct evaluations; and
- Potential number and/or types of evaluations necessary to meet a specific information need (i.e., required advocacy and accountability efforts at local, state, and national levels).

There are means to address these issues, such as conducting a needs assessment of the targeted audience, before deciding on content and system design.

Developers can provide additional help features within the system such as access to technical support, listservs for participants to post questions, and/or links to additional instructional and educational sources. Planned training sessions and presentations of the system can also provide support.

Motivation and Commitment to Evaluate

Some large libraries with available resources only conduct limited or required evaluations while smaller libraries with limited resources may conduct numerous evaluations. Motivation and commitment may be the key factors in the use of a system, more so than size or type of library. Developers should consider content development based on surveys of targeted audiences' use of evaluation. Other important considerations include: what evaluations are conducted, under what circumstances (i.e., situational context), and why the evaluations are conducted. An understanding of the types and scope of evaluations the target audience already conducts can form the foundation of the type of content contained within the instructional modules of the system.

Education Factors

Education as a factor in content development may be as valuable a feature in a system as the evaluation content. A need may exist to motivate those who conduct evaluations to move from primarily conducting required evaluations (i.e., reactive state) to planned evaluations in anticipation of needs, future advocacy efforts, and for inclusion of evaluation in a library's management decision-making process (i.e., proactive state).

Levels of System Entry

Anticipated target audiences have differing levels or degrees of experience in conducting evaluations. They also have differing levels of available resources, funds, and staff time to commit to a project for data collection efforts for evaluation. Developers of evaluation instructional systems can provide entry levels, or tiers of entry levels, that address the data needs for differing experience levels and available resources of targeted audiences.

Content Development

There are numerous approaches related to content development of modules. Approaches determine the focus of the content within the modules. Some examples include:

1. Evaluation approach—entry modules contain broad categories of evaluation approaches (i.e., outputs, outcomes, service quality, etc.). This approach assumes a certain level of experience in conducting evaluation.

2. Context approach—entry modules contain a series of questions presented to participants to determine the type of evaluation needed based on the context of the need (i.e., local library advocacy, state and federal reporting requirements, etc.). The context approach would guide participants to the best evaluation approaches to meet specific needs based on the question addressed.
3. Scenario approach—also referred to as problem, purpose, case study, and situational approaches, the entry modules describe a number of common, recurring situations. The scenario approach would also guide participants to the best evaluation approaches to meet specific needs based on the scenario presented.

There are other approaches to consider for content development. Developers can include each of the above as differing levels of entry to the system.

Descriptive vs. Interactive Educational Strategies

The degree to which a Web-based evaluation instructional system can be automated and customized to meet the specific and situational needs of a particular library is an important consideration in the development of these systems. The EMIS approach is largely a descriptive, one directional means of education in which the user works through a set of previously developed instructional modules. Because these modules are general treatments of the topics, the extent to which the modules are appropriate for the user's specific library and evaluation needs may be limited.

The EDMS approach relies on both a descriptive and interactive strategy. Although this approach is currently under development, the goal is to provide an interactive, problem solving technique that allows the user to engage in the selection of the data to be used for the evaluation, the approach that would be taken (e.g., e-metrics, outcomes, service quality, etc.), and the type of output desired from the evaluation. Moving toward a semi-automated, interactive evaluation approach may increase the ease with which such evaluations can be done.

Situational Factors and Contexts

Included within the data collection efforts, instructional module developers should give special attention to identifying situational factors and the contexts of evaluations that may be unique

to a specific library regarding success with evaluation. Such situational factors may include governance structures, user demographics, resource availability at the library, staff make-up, and many others. Understanding situational factors and context will inform the final recommendations for which types of evaluation may be most useful and in what settings.

Enhancing Web-Based Instructional Systems

Library decision makers, researchers, and practitioners find themselves in a situation where they need a range of evaluation data and information to assess specific aspects of library services and programs. Rapidly evolving evaluation approaches have led to the development of numerous evaluation techniques and strategies within both the traditional and the networked environment. There are, however, few tools or resources available to aide in the selection of best-fit evaluation approaches needed to fulfill specific evaluation needs. The range of evaluation techniques and strategies available require that library administrations, researchers, and practitioners carefully match an available evaluation practice to meet their library's specific needs.

Within an environment of technological change and increasing pressures to justify services and resources, libraries in the networked environment must embrace new technologies to help them address these concerns. Web-based evaluation instructional systems are a promising means for helping libraries meet the pressures they face. There are, however, a number of steps system developers can take to enhance the development of these systems.

Developers can conduct pre-development data collection activities to determine module content, system design, and entry-level needs. Examples of data collection activities include:

- Needs assessments, including interviews, surveys, and focus groups of interested and affected stakeholder groups (i.e., library boards, administrators, patrons, etc.);
- Site visits to institutions and libraries to review evaluation practices and situational factors that may effect the evaluation;
- Collection of existing evaluation documentation and reports when possible;

- On-site interviews with library researchers and practitioners; and
- Attendance at seminars or demonstrations where researchers and practitioners present and explain how they conduct evaluation approaches in a particular type of library.

Data collection activities during pre-development stages can help system developers identify best evaluation practices.

Additional data collection activities to enhance evaluation instructional systems include review of selected library evaluation reports, a review of current literature and research related to evaluation and assessment practices in the library community, and a review of best practices for library evaluation methods and measures. In conducting these data collection activities, system developers will be able to:

- 1) Map the various areas within libraries where research is applied;
- 2) Identify the types of evaluation frameworks used within each library area (internal research efforts) or for each area outside the library (external research efforts);
- 3) Compile and cross-reference research efforts based on circumstance and situational context; and
- 4) Compile a list of results as reported by researchers and practitioners for each circumstance and situational context.

Results of the data collection activities will identify areas within a library that are being assessed, the extent of this assessment, the evaluation frameworks used to conduct the assessment, and the degree of effectiveness (or lack thereof) of this assessment from a researcher perspective as reported within the results.

While Web-based evaluation instructional systems offer many potential benefits to libraries, there is a need for more research and development in this area. This paper explored the opportunities and potential benefits that centralized Web-based evaluation instructional systems can provide for libraries in the networked environment. Perhaps most significantly, Web-based evaluation instructional systems, by providing the types of information detailed above, may have long-term value in helping libraries maintain or enhance funding, advocate for their roles in the communities they serve, and develop long-term sustainable strategies for support.

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Value and Impact Measurement: A UK Perspective and Progress Report on a National Programme (VAMP)

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Abstract

This paper describes the background, initiation, and progress of the UK Society of College, National, and University Libraries (SCONUL) Value and Impact Measurement Program (VAMP).

SCONUL had identified a growing need from University Librarians and Directors for data or methods to prove the value and worth of their library services to senior institutional stakeholders. The SCONUL Working Group on Performance Improvement (WGPI) was asked to develop a proposal to answer this requirement. The resulting VAMP project was approved by the Executive Board in February 2006, and is managed through a subgroup of the WGPI. The author has been designated as the Project Manager for the program.

The anticipated product of the program will be a web-based framework or toolkit which will guide library managers in the use of a range of products and services that can be used to demonstrate the value and impact of academic libraries. A range of performance and improvement tools already exist which assist this purpose, and the project will therefore begin with an audit and critical review of these, and a member requirements survey. These together will provide a gap analysis to identify where new instruments may be needed.

The succeeding phase of the program will therefore consist of the commissioning of specific work packages to develop new instruments and tools. These may include standard methods for assessing impact, value for money, staff performance and process costing. The overall framework or toolkit will also assist those who choose or are required to work within Balanced Scorecard, Critical Success Factors or Key Performance Indicators regimes.

By the time of the conference the review and survey phase will be complete, as will a synthesis of findings and members workshops designed to gain feedback and support for specific product developments. Product definitions should also be complete, and work packages commissioned. The

paper will therefore be an interim report describing these phases and looking forward toward the final range of products.

Introduction

This paper reports on the progress of a UK programme intended to assist university library directors in demonstrating the value and worth of their libraries to senior stakeholders within their institutions.

The Value and Impact Measurement Programme (VAMP) has now completed its first phase, and therefore this is an interim report. The author and colleagues within the UK & Irish Society of College, National, and University Libraries (SCONUL) are keen to receive feedback on the conceptual basis, rationale and progress of the programme so far. This conference provides an opportunity for colleagues in North America to comment on the programme and to express opinions from the perspective of a different context.

The paper is organised as follows:

- Definition of the programme and its aim and approach
- A description of progress to date including discussion of the place of library value and impact measurement for advocacy and accountability within institutions
- Definition of the next phases of the programme

The VAMP Programme

Background

The requirement for the Value and Impact Measurement Programme arose from a recent SCONUL Members Survey. This suggested that a 'top concern' for university library directors was the need for data and methods to convince senior institutional stakeholders of the contribution and worth of their library services.¹

Independently, the SCONUL Working Group on Performance Improvement (WGPI) has a continuing commitment to provide a toolkit of data,

measurement techniques, and instruments which meet the needs of the membership.²

In September 2005, the WGPI was asked by Executive Board to consider how SCONUL might respond to this member feedback requesting assistance in the area of impact and value for money. The Board had earmarked a significant sum of money for this work. Having agreed that an initiative of this kind was both topical and relevant, the WGPI formed a small Subgroup as a working party to scope a project proposal.

Subsequently an outline schedule of work was developed and given the title of the Value and Impact Measurement Programme (VAMP). The SCONUL Executive Board approved the programme in February 2006, and allocated the funding.

The proposed programme is intended to provide some new measurement instruments and techniques in specific areas currently lacking, and also generate a full coherent framework incorporating other existing WGPI offerings. The proposed programme would therefore link the current aspirations of members with the long-term commitments of the WGPI.

Target Audience and Benefits

The intended audience of any products developed would ultimately be senior institutional stakeholders of academic libraries, but only through local university librarians or equivalents. The products will therefore be for librarians to use within their institutions, mainly for advocacy purposes. The programme is not intended to generate SCONUL products which will be directly consumed by these stakeholders.

The identified benefits of having effective tools and techniques might include:

1. Attainment and retention of Library institutional income.
2. Proof of value and impact on education and research.
3. Evidence of comparability with peer institutions.
4. Justification of a continuing role for libraries and library staff.

Specific Objectives of the Programme

The anticipated overall material product of this programme will be a Web-based framework or toolkit which guides library leaders in the use of products and services that can be used to demonstrate the value and impact of their library

and information services.

A range of performance and improvement tools and services already exists, many of which are offered through, or associated with, the WGPI. The programme will therefore incorporate an audit and critical review of existing products mapped against member requirements, followed by a gap analysis to identify where new instruments may be needed. Within reason and the boundaries of available resources, work packages will then be commissioned to address existing gaps.

Areas of good provision with products currently available include customer satisfaction surveys and measures, the SCONUL Statistics, and the opportunities for benchmarking provided by these products and the Benchmarking Manual. There is however a feeling that not all of these services are well enough known and taken up as broadly as they might be. Areas of weakness or current development in the measurement tools offered might include value for money, staff measures, and process costing. There is also a need to build on the involvement of members in the LIRG/SCONUL Impact Initiative.

It is intended that the bulk of the investment sought for the programme will go into developing or identifying techniques and instruments for impact and value for money measurement, identifying where existing products and services may contribute to these, and to incorporating them into an overall toolkit including all existing offerings.

The overall framework or toolkit will also assist those who are required to work within Balanced Scorecard, Critical Success Factor, or Key Performance Indicators regimes. The programme will be informed by consultation with the SCONUL membership, and a user panel is being formed.

Programme Structure and Plan

The Project is overseen by the WGPI as Project Executive Board working through the Subgroup. The author agreed to act as Project Manager and this role is intended to ensure practical delivery of the overall programme. A modified and very simplified PRINCE2 methodology has been used for the programme.

The project plan with key milestones is given below. The programme is based on the delivery of a number of products which each require an individual work package (WP) to be defined and completed.

Individual packages will be let on a

commissioned or competitive basis depending on their nature. The Subgroup view is that this programme requires a closely managed combination of diverse inputs from various sources, as there is no obvious supplier for the complete range of required products. Phase 2 and 3 products could also not be defined at the outset, given that they depend on the outcome of the scoping study.

Phase 1: Definition and Scoping Study

March – April 2006

WP1.1	A Critical review of current initiatives and work in the field, including awareness of international programmes and research and work from other sectors.
WP1.2	A Survey of SCONUL members to clarify and define their requirements.

May – June 2006

WP1.3	A Synthesis of findings from the above to define gaps in current offerings and hence succeeding work packages in Phase 2.
WP1.4	SCONUL Conference workshops to engage members and seek feedback on Phase 2 proposals.

Phase 2: Product Development

July – December 2006

1. The development of new tools and products to measure value and impact, and to meet other requirement gaps.
2. Review of existing tools and products.

Phase 3: Product Delivery

January – April 2007

1. Development of web site for programme and continuation
2. Exit, dissemination, and maintenance strategy definition

Programme Progress

Introduction

Current academic library measurement tools and techniques may not be sufficient to demonstrate value and impact, and may therefore not deliver persuasive enough data to achieve effective advocacy and accountability to senior managers of academic institutions.

The first phase of the Value and Impact Measurement Programme was intended to review existing offerings in this field, and set these against the requirements and opinions of SCONUL members to define specific shortcomings and gaps. These would define the products to be developed in Phases 2 and 3. A by-product might also be better understanding of value and impact amongst SCONUL members including more clarity on where existing tools already provide relevant data.

Evidence Base at UCE Birmingham was commissioned to undertake the Critical Review (WP1.1). LISU at Loughborough University were commissioned to undertake the Member Survey (WP1.2), and together to develop the Synthesis (WP1.3). A report describes the findings of the first three work packages of the programme.³ The SCONUL Conference Workshops (WP1.4) were intended to deliver a combination of endorsement of the programme and additional ideas and suggestions for incorporation.

Professor Peter Brophy of Manchester Metropolitan University was additionally commissioned to provide expert opinion on all the work done so far, and this again provided endorsement of both the intent and content of the programme and the recommendations for the next phase, together with some valuable additional thoughts.⁴

All the products of Phase 1 will be mounted on the VAMP area of the SCONUL Web site in due course.

Critical Review

The Critical Review was undertaken by Evidence Base at UCE Birmingham. The review was wide-ranging and ambitious in scope, with the intention of assessing existing tools and methods which might be used to measure the impact, worth, or value of the library service.

The review covered methods and tools for potentially assessing value and impact arising from

the following sources:

- SCONUL initiated or promoted services
- Other UK and European academic library initiatives
- Initiatives from other UK library sectors
- International initiatives

This paper cannot cover the full detail of the review and Brophy's subsequent comments, nor can it fully reference every single initiative mentioned in the text. The following sections will attempt to summarise and reflect on the main findings.

The Effective Academic Library

The Review's historical reference point was "The Effective Academic Library" (EAL). This presented a 'framework for evaluating the performance of UK academic libraries,' published in March 1995,⁵ and arose from a working party on Performance Indicators for libraries set up by the UK Universities Joint Funding Councils in response to the Follett Report on University Libraries. It seemed that this framework and a perspective on a decade of subsequent work in the performance measurement field would provide a full picture of what might, or might not, be available.

EAL defined its framework across five areas:

1. Integration
2. User satisfaction
3. Delivery
4. Efficiency
5. Economy

A set of thirty-three specific indicators was recommended to populate the framework.

The Critical Review sought to assess what progress SCONUL and other agencies had made in the intervening years to activate forms of measurement associated with these areas. The main areas of likely interest to those seeking evidence of value and impact are the first two, although all areas will have some relevance to advocacy, depending on the prevailing style of debate within a particular institution and the focus of senior institutional stakeholders. Brophy rightly cautions that the EAL is now substantially outdated and was primarily a managerial analysis, but it was felt to be a logical starting point for the review.

Integration

SCONUL has a separate and distinct focus of activity for academic quality assurance, the

Working Group on Quality Assurance.⁶ This group produced an 'Aide memoire' for UK national Quality Assurance Agency (QAA) reviewers, and more lately SCONUL Guidelines for QAA institutional Audit in England.⁷ This work has guided reviewers toward assessing the integration of libraries into the teaching enterprise of institutions under review, and covers perhaps part of three (planning process, service user liaison, and audit mechanism) of the five measures or areas of measure recommended within EAL. The others (strategic cohesiveness and resourcing mechanisms) are not, and in the latter case deliberately so.

The conclusion therefore might be that indications of integration of the academic library with its parent educational enterprise in the intervening period have been focussed on practical national audit requirements. SCONUL has been successful at influencing this process and broadening the view of auditors, particularly with respect to relationships between the library and courses of study. However because these audit mechanisms avoided issues of funding and were focussed on teaching quality, the integration of the library with the research enterprise of an institution and therefore with its full overall strategy have not been given equivalent attention. There is clearly a gap here to be filled.

The reason for the gap is that, in the UK, neither HE Teaching QA nor the UK Research Assessment Exercise is particularly hospitable to value or impact measurement. The former defines quality in terms of quality assurance of processes, and the latter in terms of quality as defined by a panel of experts judging a limited range of outputs.

User Satisfaction

The review recognises that SCONUL has made significant progress in offering methods for assessing user satisfaction in academic libraries. This progress can largely be attributed to the success of the SCONUL User Survey template⁸ and to the UK and Irish implementation of LibQUAL+®.⁹ Both have been used for advocacy within institutions, demonstrably to considerable effect in some cases. LibQUAL+® provides a substantial range of data which can be used to indicate impact, and its origination was based firmly on the effect academic libraries have on users. It might though be said that both surveys are library centric, rather than focussed on educational outcomes.

UK Universities now also have a National Student Satisfaction Survey,¹⁰ and Brophy suggests that this will become hugely important to institutions in future.

The review perhaps does not reveal fully how effective these surveys are in meeting the needs of advocacy and educational impact. Clearly satisfaction measures can play a strong role in advocacy, but the view that satisfaction equates to impact suggests a narrower definition of the latter than this author can accept. Students and staff may be satisfied with the experience of engaging with their academic library, but this is not evidence that it makes an educational difference in either the short or long term.

SCONUL Initiatives

SCONUL Statistics

These statistics¹¹ and related products and services are clearly used for advocacy. How much they can reveal of academic library impact is questionable, but they are certainly widely used to demonstrate and compare efficiency, value for money, market penetration and service take up. The HELMS publication¹² was created as a deliberate advocacy development from the base SCONUL statistics data aimed at Vice Chancellors. The indicators and measures here again may not demonstrate impact, but can show comparative value for money.

Information Literacy

Information Literacy is obviously a key area where an outcome in individuals is being sought through academic library activity. The review drew attention to the work of the SCONUL Working Group on Information Literacy¹³ in the fields of performance measurement¹⁴ and in a report¹⁵ containing case studies associating information literacy programmes with curriculum learning outcomes. The connection between information literacy and learning clearly offers a good opportunity for direct impact measurement at the individual level, and also at the institutional level where information literacy attainment is embedded in university strategies.

Impact

The key project relating to impact measurement on which VAMP is likely to draw is the LIRG/SCONUL Impact Initiative.¹⁶ Two successive groups totalling twenty-two academic libraries took part across 2003-04. Each library chose a subject or service for the assessment and demonstration of

impact. Many participants chose projects relating to either electronic services or information literacy. This initiative has generated a number of reports and papers.^{17,18} It has however been recognised that these projects need dissemination and distillation to embed this form of measurement within UK higher education libraries.

Other UK and European Academic Library Projects

The review recognised that there have been at least eight JISC¹⁹ or EU projects in the last eight years which might provide research findings or measurement toolkits relating to the assessment of value or impact. Many of these have been focussed on the impact or value of electronic resources. Unfortunately the subsequent impact or take up has not been great, and VAMP will certainly draw on these projects in Phase 2. Significant work here might include the Evaluated toolkit,²⁰ the Outcomes project,²¹ and EDNER/EDNER+.²²

Other UK Sectoral Work

The review covered other UK sectors in some detail. In many areas there is work which seeks to address the question of measuring library value and impact, particularly in the public sector. Impact measures have been implemented in public libraries,²³ but the actual measures appear to be surrogate indicators based on outputs, and as Brophy points out, these need to be subject to greater critical evaluation.

Of particular interest to the VAMP project is the example of the British Library's contingent valuation exercise.²⁴ This certainly appeared to be undertaken for advocacy reasons, but its applicability to and potential credibility within the academic library sector remains to be properly assessed.

Health libraries in the UK have been seeking to demonstrate the direct impact of libraries on clinical practice or patient care for some time.²⁵ This 'evidence based' approach is likely to have some relevance to the VAMP initiative.

Other International Work

The review considered other work, mainly from the English-speaking world. Those attending this conference will no doubt be thoroughly familiar with the work of the Association of Research Libraries in the field of statistics and measurement,²⁶ and it is not therefore necessary to dwell on this here. Australian academic libraries co-operate on performance through the Council of

Australian University Librarians (CAUL) and its 'Best practice' programme.²⁷ In both of these contexts there are similarities of interest and approach with SCONUL, but there is perhaps the same gap in national provision of the specific impact or value tools and measures which VAMP is attempting to define. This is not to say that there is not interesting work in this field. Outcome based evaluation work has resulted in examples of toolkits such as that produced by the University of Washington.²⁸ In South Africa, de Jager²⁹ and Whitmire³⁰ have studied links between libraries and student performance.

Conclusions

The review reveals a vast amount of previous work and existing products which might be relevant to, or form part of, the final VAMP armamentarium. It is however also clear that more critical analysis and further development of many of these projects is required before they might form credible and suitable instruments for the SCONUL membership.

Survey

The survey of members was carried out in April 2006. The objectives were to investigate current levels of activity amongst SCONUL member libraries in the areas of value and impact measurement, and to identify perceived gaps in the desired range of performance measurement tools available to members.

Thirty-eight institutions responded to the initial survey, representing a sample of about 27% of the population, but covering the full range of types of institution in membership. The relatively small sample was likely to be partly the result of the tight timetable.

Nearly 70% of the sample recognized that they had undertaken some value and impact measurement, reinforcing the view that this is a 'hot topic.' Six institutions had participated in the LIRG/SCONUL Impact Initiative. Only eight institutions were subject to any mandatory institutional measurement in this field. Consequently the majority of value and impact measurement is library initiated and defined.

Rationales for undertaking value and impact measurement were almost numerically evenly spread across the three motivations of advocacy, service improvement, or inter-institutional comparison. Most libraries gave more than one response, and as Brophy observed, this highlights the mixed motivations for value and impact

measurement. This creates a potential difficulty for the VAMP programme as products designed for internal management purposes may be quite different from those constructed for advocacy.

When considering the actual tools and methods libraries identified as providing evidence of value and impact, fifteen had used an in-house methodology or internal data against sixteen using standard data (e.g., SCONUL Statistics), standard survey packages (e.g., LibQUAL+®, SCONUL Template), or standard business planning methods (e.g., Balanced Scorecard). There is therefore an indication that UK libraries will use standard techniques in this area if available, but many either may not wish to or do not know about them. Interestingly, by far the most frequent problem of data collection was registered as time. Clearly standard techniques are more likely to be less time consuming, but some may fail individual institutions on a number of the other problems identified. More than half the respondents considered lack of appropriate methodologies or statistics to be the main barrier to value and impact measurement.

With respect to advocacy, about a quarter of respondents indicated that buy-in from local institutional stakeholders was a problem. Whilst this includes library staff, problems were also identified with engaging users in the measurement process, and a lack of institutional understanding of the results and a failure of the measurements to influence institutional decision-making. Brophy observes that there seems to be little demand from within institutions (outside the libraries) for value and impact measurement, and suggest that perhaps there is an advocacy role for SCONUL in working with Vice-Chancellors directly to proselytise these measures and approaches.

The areas of service which libraries would like to be able to measure was the important finding for identifying gaps in provision, and therefore defining the second phase of the VAMP programme. A large number of responses identified staffing and operational issues as a key requirement (sixteen responses). Impact was identified by seventeen; twelve generally or for specific services, and five specifically for impact on institutional strategies. Cost issues and customer satisfaction were identified in five responses apiece.

Ten respondents undertook more detailed follow-up interviews. One important finding from these was that the term 'value and impact' is not seen as 'an item.' Respondents generally have an

understanding of what each is separately, and can define the terms individually, but suggest there is no particular link between the two concepts.

The main conclusions and recommendations arising from members from the survey might therefore be summarised as:

- There is a need for measures to demonstrate that academic libraries
 - Deliver value for money
 - Make a difference to users
- Measurement needs extend beyond the immediately quantifiable to recognize the real value added by libraries
- There is a need to link library activity with institutional missions
- Libraries are, and intend to be, ahead of the game by preparing measures in advance of institutional requirements arising
- Time is a barrier to measurement, but this is reduced if standard tools are available
- Lack of such tools is the most significant barrier
- Impact is considered to be a difficult, if not impossible factor to measure
- Despite this all respondent libraries were actively planning for measurement in this area, and welcomed the prospect of an available toolkit.

Synthesis

Conducting the critical review at the same time as the member survey was a deliberate project tactic, with the intention of using both analyses to create a synthesis which would define the second phase of activity. Ideally this might have been conducted by a third party, independent of the agencies undertaking each separate work package. In the event Evidence Base and LISU were together commissioned to deliver the synthesis due to the time frame and their obvious advantage of understanding both the issues and the findings.

An independent expert opinion was however sought from Professor Peter Brophy on the outcome of the first three work packages. This was intended to point up any missing areas, to inform or add to the choice of tools for development in Phase 2, and provide assurance to SCONUL members that the investment to be made in Phase 2 had some independent confirmation and credibility.

There is still some confusion as to terminology. There was some disagreement between the Subgroup members and the synthesis authors on the definitions offered in the report.

The author agrees with Poll³¹ that the terms 'impact' and 'outcome' are interchangeable. The definition proposed by Markless and Streatfield³² in terms of impact being any 'effect' of the service seems to reduce 'impact' to being indistinguishable from 'effectiveness.' Services may be effective but have little impact; a service may be ineffective but have a marked impact (if only in a negative sense). The identification of impact with 'higher order effects' of the library seems to this author to reflect what level of measurement we are seeking. Impact may operate at a number of different strata: personal, institutional, professional, vocational, societal, national, and international. Some academic libraries clearly produce effects in all these dimensions. The definition of 'value' proposed also seems a little narrow, omitting the expression of the need to recognise where the library adds value, which seems to be different to either 'value for money' or 'cost-effectiveness.'

The synthesis rightly emphasised the finding that a relatively small range of the available tools in this field had been used by respondents to the survey. This suggests that the programme should incorporate promotion and training elements for both new and existing products. Brophy reinforced the conclusion that only a limited number of tools have been effective in the sample. One objective of the VAMP programme should perhaps therefore be to simplify and focus the range of offerings.

The critical gap identified is, according to Brophy, the need to measure the effect of library on educational attainment and research attainment. Some form of graphical representation or framework to summarise existing products and gaps more clearly is being considered.

The recommendations from the synthesis are provided below in the section on 'next steps.'

SCONUL Conference Workshops

The SCONUL Conference Workshops were conceived as a means of sounding out the membership about the progress of the programme, and also to act as a source of further opinions and views to enhance the findings and conclusions drawn from the first phase projects. They were conducted at the SCONUL Annual Conference in Newcastle in June 2006, and did generally result in both endorsement and support of the plans and outcomes for the programme.

Three groups of questions were posed to attendees, under the following headings:

- How does accountability and reporting work in your institution?
- What evidence do you present in your own institutions to demonstrate value and impact, or the worth and contribution of your library service?
- What additional tools do you want from SCONUL to help you provide evidence of worth and contribution?

Attendees reported a predictable variety of reporting lines and structures, and confirmed the view that tools are required to allow library directors to present arguments that properly address the different priorities and approaches of a variety of stakeholders.

Many methods were apparently in use. The value of the SCONUL Statistics was reinforced, confirming the need for continuing support and development of this area of SCONUL's activity.

All the defined VAMP lines of enquiry were endorsed. In addition members wanted assistance with defining benchmarking partners, and with improving communication networks and information resources in this area. Assistance with value and impact measures relating to library staff was highlighted. Examples of good practice were sought, and the need for a Web site pulling all of this together reinforced. Other sectors and some agency partners were suggested to help with the initiative.

There was an emerging view that the precise cause and effect mechanisms of library activity on educational attainment, and in particular how library resources and services work in a pedagogic sense may be beyond the scope of the VAMP programme. There is a suggestion that there is a "Big Project" here needing to be recognised and scoped, and that specifying this might be part of the VAMP exit strategy.

A point raised was that perhaps we are approaching this issue from the wrong direction. Academic libraries should now be re-engineering all their processes to deliver educational impact, rather than the previous limited range of traditional outputs and services. Measurement activity might then perhaps follow this change rather than precede it.

Conclusions and Next Steps

Conclusions

The outcome from the first phases provides a clear

set of needs to be met and some definition of the particular products required to meet that need.

In general the products required will be geared towards advocacy as this reflects the original motivation for the programme. However part of the job of advocacy is to prove that the library is well-managed. The tools required need to be robust and easy-to-use. Brophy makes this point and suggests that this is tackled by combining work in other sectors with existing academic literature alongside more recent JISC studies. It may be that the overlap of interest with other sectors suggests a community of practice in the field of value and impact measurement should include a wider membership than just academic librarians.

Finally and simply we need some products to offer, but we also need some supporting or directing processes to sustain and encourage their use.

Next Steps

Taking into account the work done so far, the plans for the next phase are given below. The proposals for specific work packages are listed under the headings of either 'content' products (the specific tools, techniques and methodologies for measurement and improvement), or 'process' products (supporting, enabling or presentation mechanisms to allow members to make best use of the content products). This breakdown now effectively replaces the original second and third programme phases described above.

Content Products

2.1 Value & Impact Guidelines

These are for measures and techniques which focus on outcomes. The intention is to provide guidelines on what is available, plus a technique for defining local measures. It may also be helpful to define what cannot be achieved.

WP 2.1.1	Institutional Value (e.g., VFM & Economic Impact)
WP 2.1.2	Impact on Learning & Teaching
WP 2.1.3	Impact on Research

The most critical product of the programme must be methods for demonstrating that libraries are having an impact on student learning and research outcomes. Negative impacts should not be ignored.

2.2 Staffing & Operational Measures Guidelines

The objectives here are to define methods for unit costing of different library operations and services, for assessing the particular contribution of library staff, and for providing standard approaches to activity and process costing.

WP 2.2.1 Staff Costing

It will also be important in the UK context to take into account national approaches to activity based costing in universities, and in particular the desire to attribute any university cost to either teaching and learning, or research.

WP 2.2.2 Staff Added Value & other measures

There is also a continuing need to establish some measure or assessment of the contribution of individuals, or roles, (or indeed teams and larger structural elements) to the overall educational enterprise. This should be increasingly important in an age when the job is not simply one of fulfilling processes, but also involves (at least in progressive libraries) a significant proportion of project work for improvement and development, often with others outside traditional library boundaries.

WP 2.2.3 Other operational costing methods

WP 2.3.1 Review of existing products and tools, including reasons for non-use

WP 2.3.2 Re-branding and packaging of existing tools for web site, including training, guidance & cases

Process Products

There is a need to present all the above in a coherent way to the membership, and to create the human processes which will develop and sustain this area of activity into the future. The establishment of a group of those interested and active in advocacy will be a key to the effective continuation of work in this area.

WP 3.1 Web Site development

How all of this will be presented offers a conceptual challenge. Standard performance measurement frameworks may be able to incorporate value and impact measures where they exist, and take account of stakeholder perspectives and viewpoints. However, creating a Web site which achieves not only this, but also provides a guide, education, examples, interactive services, and facilitates a community of practice will require careful scoping and definition at the outset.

WP 3.2 'Community of practice' establishment

WP 3.3 Maintenance & sustainability strategy

All these work packages need to be commissioned in the immediate future to meet the programme timeline. Process product projects can begin immediately, but are obviously dependent for completion on the content products.

Acknowledgments

This work is based substantially on the work of others, particularly those involved in the VAMP programme so far. In particular Angela Conyers of Evidence Base, and Claire Creaser and Suzanne Lockyer of LISU are responsible for the most of the information on progress so far. Professor Peter Brophy of Manchester Metropolitan University has added considerable value through his report on the work to date and helpful subsequent discussion. My colleagues on the VAMP Subgroup: Maxine Melling of Liverpool John Moores University; Philip Payne of Birkbeck College, University of London; and Rupert Wood of the University of Reading, have together created the programme concept on which the paper is based. I am grateful to them all. They bear no responsibility for any errors, misunderstandings or mistaken conclusions, which are entirely mine.

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Seattle to Charlottesville and Back Again: Building a Library Assessment Community

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I'd like to tell you a story that begins in Seattle and winds its way to Charlottesville and ultimately back to Seattle. Along the way this story gathers momentum and accumulates a community. It is a story that starts local and goes global. A story that begins inside a particular library and spreads throughout a university. A story that focuses on improving specific services and grows to focus on shaping the academic library of the 21st century.

Let me take you back to 1991. I had just accepted the position of Associate Director of Libraries for Public Services at the University of Washington (UW) in Seattle. I was packing up my office at the University of Illinois when a curious e-mail came across my screen. It actually was one of the earliest e-mails I ever received (or remember receiving), and it came to me by way of a system called BITNET. The e-mail was from Steve Hiller at the University of Washington. In the e-mail, Steve reiterated that he was glad that I would be coming out to the Pacific Northwest to become a Husky, and updated me on work that was being launched that I would be involved with after my arrival.

It turns out that the UW had just undertaken its first strategic plan, and had committed itself to becoming a user-centered library. They weren't quite sure what it meant to be user-centered, but they were going to find out. The library director, Betty Bengtson, had asked Steve to lead a task force that would define the user-centered library, assess user needs and patterns, and take action to improve services. The charge was simple enough. The execution would be much more complicated and complex. When I read that fateful e-mail, I knew that this was going to be an interesting ride. I didn't know then how important of a ride it would be.

I traded the flatlands for the land of the good rain, and we were off and running. I soon learned that at the UW we were listening to our users, but we were not doing so systematically or in a meaningful way. Like most libraries, we had suggestion boxes. We received letters and phone calls from users. We got feedback at service desks. We had a good liaison program and the obligatory

faculty advisory group. But our approach was piecemeal, obtrusive, and episodic.

Early on, we also learned that there were partners across the university who could help us. We drew on the expertise of our colleagues in education assessment who were consummate professionals willing to tutor us. We collaborated with other units and departments who shared out interest in learning more about how technology was transforming research and learning. We melded survey instruments and built off each others assessment efforts.

We learned that the University of Washington was not a solitary voice in the assessment forest. We found similar voices at the University of Virginia, the University of Arizona, Texas A&M, the University of Waterloo, and many others. About this time, the Association of Research Libraries (ARL) launched the New Measures initiative. Texas A&M was conducting ground breaking work on LibQUAL+® which would soon be aided and abetted by ARL. The ARL Assessment Institute was established, and we eagerly sent folks off for this intensive staff development opportunity. Could it be that a nascent library assessment community was forming?

Today, the UW Libraries nurture and sustain an ever evolving library assessment program. Our triennial surveys are institutionalized and provide invaluable information about students and faculty needs and priorities, and the importance of and satisfaction with the Libraries during a period of unprecedented change. We now continuously listen to our users and actually do something with what they tell us. Surveys, usability testing, environmental scanning, LibQUAL+®, focus groups, and learning outcomes. We also take care of ourselves as we seek to understand and enrich our diversity and organizational culture. In 2005, we launched a Communication Enhancement Initiative that resulted in a comprehensive internal communication plan.¹ We listen in multiple ways, invoking the practice of methodological diversity.²

You name it, we try it—if we think it will bring

us insight that will lead to action. We now have nearly fifteen years of longitudinal data on satisfaction rates and user behavior and priorities. We use what we learn to make better decisions, allocate and reallocate resources, improve services, and create our preferred future. What started as a volunteer taskforce in 1991 has matured into a full blown Assessment and Planning department under the visionary, passionate, and inclusive leadership of Steve Hiller.

As the Dean of the Libraries, I draw everyday on this work to communicate our impact, resource needs, and new capacities. Assessment gives library directors tools for advocacy. I can not imagine being an effective—or responsible—library leader without our assessment program. That would be like walking a tightrope without a net—initially exciting but ultimately foolish, wasteful, and even deadly.

Our story continues to gather momentum and the community of practice expands thanks to ARL's "Making Library Assessment Work." Steve and Jim Self are co-directing this effort which involves site visits and evaluation of assessment efforts at over twenty ARL libraries, including many of yours. In addition to racking up lots of frequent flyer miles and tasting regional wines wherever they can find them, Steve and Jim have discovered first hand what it takes to sustain library assessment. They are providing an enormous service to our community.

Earlier I promised that our story would lead to Charlottesville, and here we are. To my knowledge, this is the first ever conference dedicated to library assessment held in North America. We can thank co-conspirators Steve, Jim, and Martha Kyrillidou who birthed the idea for this conference and worked so hard to make it a splendid reality. It has been a scintillating gathering. Your papers have been strong, the poster sessions powerful, the keynotes challenging, the discussions provocative, and the luminaries luminous. We will point to this conference as a seminal event in the future of academic libraries. We have come so far from that curious e-mail that came my way in 1991 via BITNET. But, there is much more work to do. Libraries operate in a landscape of accelerating change and choice. As one wise soul noted, "we are riding the exponential."³

We will see increased attention to accountability and assessment in higher education. Consider the recently released *A Test of Leaders*, otherwise known as the Spellings Report.⁴ US Secretary of Education Margaret Spellings appointed a

commission to chart the future of higher education. But you probably already knew that since it greeted you on the front page of *USA Today*⁵ when you opened your hotel door this morning.

The Spellings report acknowledges that higher education in the United States is one of the nation's greatest success stories. Despite this excellence, the commission believes that higher education needs to improve in dramatic ways. The report charts out some bold ideas and others that will probably be greeted with a ho-hum response. Of the seven broad recommendations, I want to call your attention to the one concerning accountability. The commission notes that improved accountability is vital to ensuring the success of higher education. It calls for our colleges and universities to become more transparent about cost, price, and student success outcomes, and be willing to share this information with students, families, and policymakers in accessible, understandable ways to measure the relative effectiveness of different colleges and universities.

In a complementary effort, the National Association of State Universities and Land-Grant Colleges (NASULGC) proposed a voluntary system of accountability and assessment. The proposal suggests that there is a reasonable and helpful set of accountability measures that can help universities and colleges focus their resources and effectively and efficiently utilize them.

Both of these reports have the potential to influence the outline and shape of higher education in the 21st century. At the same time, we are asking questions about the outline and shape of libraries in the 21st century. We would do well to work together to find answers to questions such as:

- What new roles should libraries and librarians take on?
- How should we reallocate space with the wholesale move to digital and off site collections?
- How can we increase and measure the library's impact on new modes of learning and research, especially funded research.
- What are we overlooking? What will the scholar of 2050 have expected us to have collected and preserved?
- To what extent should libraries be responsible for new kinds of "evidence"—long-lived data, blogs, wikis?
- Can we figure out what our faculty and students will value 5, 10, 15 years from now, so

we can, as hockey great Wayne Gretzky quipped “skate to the puck”?

- How can we support the expanding university mission in a technology enabled world?
- What are the possibilities? What are the costs? What are the tradeoffs?
- Where should we invest when we have limited resources, conflicting priorities, and competing clientele as we build the user-centered library of the 21st century?

These and many more questions face us. Where do we begin? We can often find predictors of the future in the past. Early in the 20th century, Henry Suzzallo was the president of the University of Washington, a fledgling institution way out in a rainy wilderness called Seattle. President Suzzallo’s vision was to build a “university of a thousand years.” He knew that all great universities had great libraries, so his first action was to create a library to rival those in Europe. He called it a “cathedral of books.”

Up from the empty land, arose a grand gothic structure with the Olympic Mountains and the Pacific Ocean off in the distance. Suzzallo’s “university of 1,000 years” had its cathedral. Since then, the Suzzallo Library has become known as the “the soul of the university” and is a beloved symbol for Huskies around the world. President Suzzallo knew what the 20th century library should be—a magnificent building of inspirational architecture filled with the finest books from all around the world.

Fast forward to 2006. To Charlottesville. Much has changed, but one thing remains the same. The future of the university is inseparable from the future of the library. James Duderstadt, president emeritus of the University of Michigan, remarked that “the library is the most important observation post for viewing changes in learning and research.” He posits that the “future of the library may predict the future of our colleges and universities.”⁶

Indeed, the networked environment and the accelerated pace of change have transformed, and will continue to transform, libraries and higher education. Throughout this period of transformation, libraries and the people who work in them have been agents of change. We have built any time any place libraries. We have reshaped our libraries into flexible research and learning spaces to meet a variety of user needs—collaborative and individual study, hi-tech hi-touch instruction, and caffeine and chatter. It is no coincidence that every

university library selected for the Association of College and Research Libraries’ Excellence in Academic Libraries Award is known for having a culture of assessment⁷ and leadership which values and uses the power of actionable assessment.

Our future will be determined in large part by how we collectively respond to the networked world. Education and research will demand a complex, integrated, and increasingly global information infrastructure. We need to find new ways to share intellectual effort as we advance discovery and educate students for a future we can’t even begin to imagine. We must take up the challenge to “imagine, design, and realize the promise of the 21st century academic library.”⁸

This can’t be done without your assessment efforts. We need to ratchet up the investment in understanding the landscape, listening to our users, tracking patterns, and looking for places where we can make a difference in connecting people with knowledge. We can’t do this as individual libraries or lone voices in the assessment forest. We must collaborate, share information, build tools together, and consolidate data to synthesize patterns. Our users “live” at the network level, so we would do well to find ways to measure at the network level. Our assessment efforts will be even more interdependent and intertwined than ever before. We will be emboldened and enabled by partners like ARL, OCLC with the new persistent action research capabilities of RLG Programs, SCONUL in the United Kingdom, colleagues in Australia and South Africa. Each of you in this room has a critical role to play in building and strengthening the library assessment community. Our users, our universities, and I are counting on you.

My story is nearing its end. What started in 1991 in Seattle brought us to Charlottesville for this exciting exchange of ideas. In my opinion, the first library assessment conference has been an unbridled success. Congratulations to the planners and participants alike. I salute the entire planning committee, but especially Jim, Steve, and Martha.

How does my story find its way back to Seattle? With a personal invitation. On behalf of the University of Washington, I officially and respectfully offer Seattle as the site for the 2nd Library Assessment Conference. I can guarantee good coffee on almost every corner, salmon on every plate, and, most importantly, one swell conference that will enhance the library assessment community.

In the meantime, stay connected with one

another, work hard on the really difficult questions that will shape the 21st century library, and make plans to join us during the summer of 2008 in the Emerald City. We'll be waiting for you.

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Endnotes

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