Compilation of Keynote Presentations

2010 Library Assessment Conference:
Building Effective, Sustainable, Practical Assessment

Table of Contents

Library Assessment Conference Reflections from the Conference Co-Chairs…………………1
  Steve Hiller (University of Washington), Martha Kyrillidou (Association of Research Libraries), and Jim Self (University of Virginia)

Library Assessment: The Way We Have Grown………………………………………………….3
  Fred Heath (University of Texas)

Are They Learning? Are We? Learning Outcomes & the Academic Library………………...19
  Megan Oakleaf (Syracuse University)

Space Assessment as a Venue for Defining the Academic Library…………………………...…45
  Danuta A. Nitecki (Drexel University)

Value, Impact and the Transcendent Library: Progress and Pressures in Performance Measurement and Evaluation.........................................................................................................73
  J. Stephen Town (University of York, UK)

Assessing Organizational Effectiveness: The Role of Frameworks……………………………87
  Joseph R. Matthews (JRM Consulting, Inc.)

This compilation will be published as a special issue of Library Quarterly, January 2011.
2010 Library Assessment Conference Reflections from the Conference Co-Chairs

Steve Hiller, University of Washington
Martha Kyrillidou, Association of Research Libraries
Jim Self, University of Virginia

It is with great pleasure that we present the papers written by the five keynote speakers for the 2010 Library Assessment Conference held in Baltimore, on October 25-27. This is the third such conference for this growing assessment community; the first took place in Charlottesville in 2006 and the second in Seattle in 2008. The 2010 event marks an opportunity for the Association of Research Libraries to reflect on a journey that started ten years ago – at a forum on Measuring Service Quality where the latest thinking on service quality assessment was brought together and immortalized in a special issue of *Library Trends* [1].

Over the last ten years we have observed a veritable explosion in the growth of assessment within libraries, with an ever expanding number of new tools and measures that not only assist in understanding user needs and improving library services, but also are critical in redefining library purpose and roles. We have used assessment information to develop programs and services that place users at the center of articulated outcomes and measures. Library assessment is now an integral part of the effort to define the 21st century library; our tools, methods and applications are developing rapidly. They are needed for the strategic and systematic change that can ensure a vibrant and sustainable future for our communities and our institutions. Simply put, the 21st century library cannot survive unless it develops and uses assessment techniques to ensure that we remain relevant and necessary to the communities we serve.

The growth of the library assessment community can be seen in the success of these Library Assessment conferences. The number of registrants has nearly doubled from 220 in 2006 to 400 in 2010, even though we have limited registration numbers to maintain a sense of community and informal learning. The published proceedings weighed in at 450 pages in 2006 [2] and 550 pages in 2008 [3]. In planning the 2010 conference, we structured the Baltimore event around five key themes, represented by five keynote speakers whose papers are included in this volume. These papers emphasize strategic approaches to issues of service quality, library as space, learning outcomes, performance measures and scorecards, and articulation of value and impact.

Fred Heath, as our opening keynote, offers a general overview, especially of the changes during the past ten years as well as emphasizing the critical support of the Association of Research Libraries for assessment; Danuta Nitecki focuses on assessment of library spaces as a transformative and defining activity of the role of libraries; Megan Oakleaf provides perspectives on the libraries’ role in contributing to successful learning outcomes that complement work she has done recently for the Association of College and Research Libraries (ACRL/ALA); Joe Matthews discusses issues related to assessing organizational performance and performance measures; and Stephen Town expands the concepts of value and impact with the notion of a values scorecard that plays an overarching role in defining the strategic elements of the library past, present and future. Complementing these five keynote papers are the 64 contributed papers and 70 posters that demonstrate the wide range of assessment activities taking place in our libraries. The papers and posters will be published in the conference proceedings and made accessible through the conference website.
As before, we will call upon each one of you to make the best of the wisdom shared in these pages, and to share your best with the community as we plan to see each other again in 2012, moving forward by going back to Charlottesville!


Library Assessment: The Way We Have Grown

Fred Heath (University of Texas)

Abstract
This chapter served as the basis for the opening keynote speech during the Library Assessment Conference in Baltimore in 2010. It served the purpose of setting the stage by tracing the demands for accountability in the beginning of the century and outlining progress made. It provided important background and context for the following four keynote papers delivered by Megan Oakleaf on teaching and learning, by Danuta Nitecki on assessment of library spaces, by Joe Matthews on performance measures, and by Stephen Town on library value. This chapter emphasizes some of the work the Association of Research Libraries and its partners have supported over the last decade and places ARL developments in the larger context of assessment activities across the profession and across the globe.

“If I have seen a little further it is by standing of the shoulders of giants.” Isaac Newton

Introduction
It is my privilege to write this paper based on an invitation to deliver the opening keynote speech for the 2010 Library Assessment Conference hosted in Baltimore by the Association of Research Libraries, the University of Virginia and the University of Washington. In due course I will also welcome many of the readers of this paper in person delivering a keynote that builds upon this paper, yet cannot promise that my thoughts will not have been expanded slightly as nothing stays the same, and capturing the ways library assessment activities have evolved and grown over the years is a testimony along those lines. The Baltimore event is the third time that administrators, educators, and practitioners of the sciences of evaluation and assessment as it relates to libraries have gathered in North America since 2006.1 And I am persuaded that through the work of many on the diverse aspects of library assessment, we are beginning to develop a corpus of data and knowledge that will serve this group well as we undertake to attain the conference theme: the development of effective, sustainable, practical assessment.

The conference itself has four other keynote speakers whose papers are published in this special volume of Library Quarterly. A paper by Megan Oakleaf treats us to research on how libraries and library services impact learning outcomes and Danuta Nitecki, whose work in the field of library assessment is extensive, will share with us aspects of the use of our library spaces in changing times. Joseph Matthews, whose two 2007 books on the topic are evidence of and guide to the growing corpus of research and findings on library assessment,2 focuses on performance measurement and the balanced scorecard. And, the last keynote paper is a topic particularly important in these troubled economic times, Stephen Town discusses how we can measure and convey the value and impact of library services. During the conference a large number of breakout sessions by grassroots practitioners and discipline experts guide us through the many daunting aspects of the assessment challenge and they are primarily organized along the keynote topics outlined in this special volume.
In this paper I will attempt to convey an overview of the strides we have made over the past decade in library assessment, an account of the way we have grown as a library assessment community. In attempting to carve this overview, there will be a particular focus on the role that the Association of Research Libraries (ARL) has played in knitting together diverse pieces of the library assessment movement into a coherent suite of services while at the same time creating a constructive space in which other voices can contribute to the assessment dialog.

But before doing that, I must remind us that the library assessment “movement” did not emerge from the nest full-grown a decade ago. The successes we have enjoyed have progenitors that reach back considerably in time. As we look back, we quickly become aware that concerns with service quality and library effectiveness have occupied both practitioners and researchers for at least a century.

Evaluation and assessment are synonymous with higher education in our time. Everyone attending a North American Conference on Library Assessment is familiar with the roll call of regional accrediting organizations that oversee higher education quality, planning and improvement in the United States. And most of us have had, on at least one occasion, to drag some aspect of our library operations underneath the lens of one of those accrediting bodies to affirm that we were faithfully upholding our part of the university compact with teachers and learners in our community. Our community cares very much about the quality of teaching and learning on our campuses, as well as the quality of the research that steadily advances the frontiers of knowledge and understanding. We are comfortable with accountability and transparency, and we are ready to demonstrate the return on investment, the value received, to all who may be interested.

**The Prescriptive Years**

Evaluation was not always a component of higher education. In the 19th century, colleges and universities mirrored the chaotic scene of a rapidly industrializing America so graphically portrayed in the novels of Upton Sinclair and Sinclair Lewis. One observer describes higher education institutions of that era as a ‘variegated hodgepodge of uncoordinated practices … which had never undergone any screening from anybody, and many [of] which were shoddy, futile, and absurd beyond anything we now conceive.’ Slowly, however, to harness the needs of the Industrial Age, education began to be managed, harnessed, and directed. In the public sector, schools tended to follow a common manager-centric model. As David Tyack noted in his book, *The One Best System*, control of public schools in urban settings were the province of elites, of “successful men.” Boards were comprised of business and professional stalwarts, who turned over the administration of public schools to powerful superintendents charged to shape public education to the economic needs and social conditions of urban and industrial America.

Like the public schools, colleges and universities came to be subjected to oversight and review. The rising tide of regulation saw the emergence of accrediting societies. The New England Association of Colleges and Secondary Schools was established first in 1885, to be followed in short order by the Middle States, North Central, and Southern Associations. University libraries followed a similar path.
There was little in the way of benchmarking for libraries in the first quarter of the twentieth century. Then in 1928, the Carnegie Corporation established an advisory committee, under the leadership of William Warner Bishop, for the purpose of extending over a million dollars in acquisitions grants to college and university libraries. That prestigious group of college presidents, deans and library directors quickly discovered there were essentially no established or recognized standards with which to guide Carnegie’s investments. And so the Carnegie Corporation and College Libraries standards were born, remarkable in their brevity and explicitness, vestiges of which remain with us to this day. Some twenty-one standards embraced the range of library operations, from seating (25 percent of the student body) to collection size, staffing, cataloging and classification and the like. By 1934, most of the accrediting associations had settled on minimum college library collections of 8,000 volumes and expenditures of five dollars per student.

For the most part, however, early assessment of research university adequacy was prescriptive, and the powerful advisors to the Carnegie Corporation personally wielded great influence. For the first time, efforts to develop a “scorecard” measuring library effectiveness was established and then largely abandoned by the Board. University administrators and librarians often turned to visits by or the writings of such eminent academic librarians for guidance on how to conduct their affairs. One member of the Carnegie circle, for example, personally visited 125 of the 200 supplicants for Carnegie aid. Gerould’s book The College Library Building, and William Randall’s The College Library were underwritten by the powerful Carnegie Corporation. Other influential leaders of the early twentieth century included Louis Round Wilson, Maurice Tauber and Guy Lyle. Like the works of Gerould and Randall, their writings were hugely influential during their time. Library leaders, it can be said, knew a good library when they saw one.

Collection checklists also played an important role in this prescriptive era. The Carnegie Board soon discovered through its efforts at “scorecard” and on-site surveys by luminaries, that simple volume counts were insufficient means by which to assess eligibility for Carnegie largess. The Carnegie-funded List of Books for College Libraries by C. B. Shaw of Swarthmore first published in 1930, served primarily as a means for evaluating holdings and only secondarily as a purchase guide. Keeping the accrediting societies in the game, the Southern Association of Colleges and Schools published its own guide, edited by William Stanley Hoole.

The Quantitative Years
Subsequently, the influence of the Carnegie Corporation, its interests re-directed, began to shift away from libraries. In time, the numerical benchmarks of accrediting societies, such as they were, also began to evanesce. In some ways, the change resulted from a strategic retreat by the societies from that space. As a result of the Great Depression and the draining capital requirements of World War II, colleges and universities were fiscally stressed, and the accrediting societies began to replace specific library benchmarks (and other measures of institutional adequacy) with more flexible guidelines. And as accrediting societies were permitting institutions to measure library adequacy beneath the lens of institutional purpose, library leaders moved into the vacated quantitative space. The size of collections and the scale of institutional investment in their acquisition mattered directors asserted. The American Library Association, an increasingly influential organization, filled the breach, and in 1943
adopted standards for collection size and expenditures, staffing size and compensation. In 1957, the Association of College and Research Libraries undertook to prepare a new set of standards. Completed in 1959, that six-page document served to guide the rapid build-up of college and university libraries in the post-Sputnik era, serving to define the dimensions of adequacy as the Higher Education Act of 1965, Title IIA inaugurated a national effort to improve America’s college and university libraries. The Clapp-Jordan Formula, first published in 1965, was another gesture toward quantitative standards as the measuring stick of adequacy. Reliance on checklists and other more qualitative approaches, said the authors, was ‘slow, tiresome, and costly.’

The quantitative measures have never really gone away. In 1963, The Association of Research Libraries assumed oversight of what has come to be known as the ARL Statistics™, a statistical compendium based upon Gerould’s, reaching back to 1908. Building on the ARL Statistics™, Kendon Stubbs developed the ARL Index in the early 1980s, a metrics that became widely recognized among the membership and beyond. The ARL Index is now the oldest, most stable, and most highly regarded measure of research library operations, measuring inputs on collection size, library expenditures, staffing, and services to produce an annual ranking of research libraries across North America. And in that context it must be placed at the apex of the quantitative indices that research librarians use to assess the relative strength of their library programs. That index itself went through tweaks over the years. In 1980, ARL adopted new criteria for membership that drew heavily on the ARL Index that was originally based on 10 variables selected or determined by factor analysis to be followed by a five-variable index since 1986. From 2005-6 data forward, the Expenditures-Focused Index, or as it is now known, the ARL Investment Index, shed some of the artifact-derived factors in its algorithm to produce rankings based on total library expenditures, collection expenditures, salaries and wages, and total number of staff. The annual publication of the ARL Index is always a much-anticipated event, with an institution’s placement in the rankings often a matter of concern to library director and university president alike.

Evolving Culture of Assessment
But even as the quantitative Index has grown in sophistication and acceptance as a longitudinal input measure, so too has the recognition that a complete program of assessment requires a broader perspective. That shift in mindset goes back several decades as ARL began to actively grapple with the role that process and qualitative measures played in effective organizational assessment. In 1970 the ARL Office of University Library Management Studies was established. Later renamed the Office of Leadership and Management Studies (OLMS), OLMS guided library directors through efforts at organizational development and improvement until its discontinuance in 2006. Indeed, you can trace the taproot of the new culture of assessment that now characterizes ARL back to Duane Webster’s arrival in 1970. In 1971 Duane Webster authored Planning aids for the University Library Director. With the book’s emphasis on planning and development, Webster pointed out to beleaguered library directors that proper assessment of the requirements for change was one of the essential elements of an effective planning program. A companion study by his office the next year underscored the need to focus on organizational improvement and the development of staff capabilities. In 1973, the Management Review and Analysis Program (MRAP) was born, and only a couple of years later the first MRAP studies were completed at Iowa State, Purdue, and Rochester. For those of you
who may remember the acronyms, assessment was what MRAP (the Management Review and Analysis Program) and CAP (the Collection Analysis Program) were all about—informed decision-making based upon carefully assembled information. 

It was during this period that ARL began to develop the management tools still in use by North America’s research libraries. The focus on process was evident from the time OLMS came into being, as was the influence of organizational development gurus such as Chris Argyris and Rensis Likert. A new generation of library leaders appeared to direct assessment and evaluation in research libraries. The 1973 work by Robert B. Downs and Art McAnnally, “Changing Roles of Directors of University Libraries,” shifted the focus away from traditional hierarchical management structures and inputs, and issued a call for the embrace of participatory management—a call soon to be echoed by Maurice Marchant, William Birdsal and others.

In 1978, ARL adopted the Standards for University Libraries that had been a decade in preparation by an ACRL/ARL joint committee, funded at least in part by the Council on Library Resources (CLR). The committee was chaired by Downs, and included among its members Clifton Brock, Gus Harrer, John Heussman, Jay Lucker, John McDonbald, and Ellsworth Mason. The work of the Downs Committee was completed in 1975 and the final report was presented to the ARL membership in that year. A new joint committee was convened in that year to complete its work, chaired by Eldred Smith. New measures began jostling for recognition alongside the Index. According to Beverly Lynch, the larger, wealthier institutions opposed numbers, fearing minimal standards that would not serve to sustain momentum or justify continuing library investment at those institutions. Support for the quantitative approach, such as it was, came from the smaller, less wealthy, and generally public member libraries. In their final version, the Standards for University Libraries were service-oriented, advocating processes that would support the instruction and research programs of the universities.

As library researchers and managers sought effectiveness measures that ranged beyond input measures and booklists, much of the ground-breaking work took place in the library schools and on the university campuses—a trend that would continue into the mid-90s. Frederick W. Lancaster developed both an interest and an expertise in the field and through his mentorship opened the doors to many other researchers. As Lancaster observed in his first work:

Present standards are largely based on current practices at existing institutions that, in some sense, are considered “good.” They emphasize inputs rather than outputs (services). … Perhaps what is needed is standards by which individual institutions can evaluate their own performance in relation to the needs of their user population.

Among the early thought leaders in research library circles in those days was Tom Shaughnessy, then director at the University of Minnesota. His own writings from that era evince an awareness of movements and leaders, such as Total Quality Movement (TQM) in the first instance and Deming in the second, as well as a concern of how to map those ideas toward organizational improvement in research libraries. In an important issue of Library Trends Shaughnessy squarely joined the issue of the relationship between the inputs that had traditionally driven the research library community and the outcomes that the larger research community was seeking. The question of the relationship between expenditures and quality was
joined. That important issue of *Library Trends* added sparks to the ongoing research of library effectiveness with far-reaching implications.36

Peter Hernon and Chuck McClure also established their early reputations at least in part in the fields of evaluation and assessment.37 Danuta Nitecki partnered with Peter Hernon to explore the concepts on service quality and user satisfaction on the Yale campus and elsewhere.38 Their careful work overlapped and anticipated the research being done elsewhere that became the immensely popular LibQUAL+®. Steve Hiller39 and Jim Self40 were establishing national reputations for themselves as they developed strong campus-based assessment programs at the University of Washington and the University of Virginia respectively as were Amos Lakos41 and Shelley Phipps.42 From the Columbia study to the assessment of user satisfaction at Yale by Hernon and Nitecki, the library community appeared increasingly ready, and able, to take up Dr. Lancaster’s admonition to evaluate performance in the context of local needs and expectations.

In the meantime, in Europe, a strong assessment climate was also building. The Department of Information and Library Management at the University of Northumbria at Newcastle, in many ways served to facilitate the European dialog. The first international conference on assessment can fairly be said to be the 14th Northumbria International Conference on Performance Measurement in Library and Information Services, held in Northumberland in 1995.43 The first conference proceedings documented the rich diversity of inquiry across Europe, and included contributions from such stalwarts as Stephen Town, Roswitha Poll, and Ian Winkworth. The proceedings have had an international flavor since that first year, when there were keynote addresses by US and South African speakers.

With the blossoming of web-based information technologies in the second half of the 1990s, large-scale, and collaborative, assessment projects became increasingly feasible, and a new chapter was about to begin. As Karen Coyle has observed, the tension between qualitative and quantitative measures of library performance began to take another turn in the mid-1990s as physical holdings and the acquisitions of printed materials began to share prominence with digital formats and licensed resources.44 Or as Danuta Nitecki put it plain-spokenly, “A measure of library quality based solely on collections has become obsolete.”45 As volume counts and ARL rankings based on such inputs became less useful, ARL began to develop other measures to provide information on adequacy and return on investment.

In the winter of 1999, many of the leaders in library assessment and development met in Tucson Arizona to consider the need to develop alternatives to expenditure metrics as measures of library performance.46 Carla Stoffle (University of Arizona) and Paul Kobulnicky (University of Connecticut) were among the leaders who facilitated the conversation.47 There, ARL’s *New Measures Initiative* was born, led by Stoffle and the ARL Statistics and Measurement Committee. *New Measures*, according to ARL, was to become a suite of services that libraries use to solicit, track, understand, and act upon users’ opinions of service quality. Results have been used to develop a better understanding of perceptions of library service quality, interpret user feedback systematically over time, and identify best practices across institutions. Recent years have seen a collaborative culture of assessment reach its full maturity. Methodologists, anthropologists, statisticians and others have joined librarians to produce an array of tools that enable library directors to direct resources with greater precision to areas of highest client
priority or greatest need. For example the anthropological work of Susan Gibbons has been popularized through ACRL publications and presentations and has influenced the establishment of a key strategic direction for ARL in 1995, initially articulated as the contributions of libraries to Research, Teaching and Learning (RTL), but more recently refocused on the Transformation of Research Libraries (TRL).

_The New Measures Initiative_, now re-branded as the _StatsQUAL® Gateway_, to indicate its place within ARL, underscores the convergence of qualitative and quantitative methodology. According to a recent publication, the goals are now almost entirely outcome focused:

“The goal is to establish an integrated suite of library assessment tools that tell users’ library success stories, emphasize customer-driven libraries and demonstrate responsiveness and engagement in improving customer service.”

It is probably worth taking a quick look at some of those instruments.

**The StatsQUAL® Era**

The StatsQUAL® suite provides managers access to five protocols: ARL Statistics™, LibQUAL+®, DigiQUAL®, ClimateQUAL®, and MINES for Libraries®. They share some common characteristics. First of all, they are born of colloquy and common purpose, as researchers, administrators and methodologists have come together to pool their best ideas toward common goods. Secondly, they continue the time-honored commitment of ARL to develop longitudinal data that allows the community to assess its individual libraries over time while allowing for the emergence of useful benchmarks, applicable best practices, and sharing and learning from each other. From early practices that were limited by the boundaries of individual universities have grown a suite of services that can be meaningfully employed by libraries in ARL, in North American generally, and the world.

**LibQUAL+®.** In 1998, the year that Google first burst upon the scene, Colleen Cook (subsequently Dean of Libraries and then a Ph.D. student at Texas A&M), Bruce Thompson (then TAMU Professor of Educational Psychology), Yvonna Lincoln and others began developing a modified version of the SERVQUAL protocol, long a standard in the for profit sector for measuring user satisfaction. The team proposed to ARL the development of a tailored service quality assessment tool, subsequently named "LibQUAL+®", that when fully tested, would be given the instrument to ARL for non-profit use in improving libraries.

In January 2000, the American Library Association held its mid-winter meeting in San Antonio, and at that conference the representatives of a dozen ARL libraries met in a classroom of a TAMU-San Antonio facility to discuss the possibility of pilot-testing LibQUAL+®. Agreement was reached and the first baby steps in user satisfaction assessment were under way. Martha Kyriillidou, ARL Director of Statistics, and the TAMU team successfully submitted through ARL a proposal to the Fund for the Improvement of Post-Secondary Education (FIPSE). Upon successfully securing a three-year grant, ARL brought together a forum of notable speakers who worked extensively in helping libraries with service quality improvements and the papers from that event were published as a special issue of _Library Trends_ on “Measuring Service Quality.”

At that time, eleven years ago and not too far from where we are now, the ARL forum captured
the latest thinking in assessment and provided the platform for a rich exchange of ideas that flourished in the coming years with the rapid expansion of the LibQUAL+® service.

LibQUAL+® includes the quantitative data yielded from the 22 core items, but also includes qualitative data provided by users in the form of open-ended comments. Consistently, across libraries, a striking percentage of participants--roughly 40%--provide comments, which flesh out users' service quality perceptions, and make specific recommendations for service quality improvements. In its brief life, LibQUAL+® has collected data from more than 1,000,000 library users across more than a thousand institutions. It has been used in the United States, Canada, Mexico, Bahamas, French Polynesia, Australia, New Zealand, Singapore, the United Kingdom, France, Ireland, the Netherlands, Belgium, Switzerland, Germany, Denmark, Finland, Norway, Sweden, Cyprus, Egypt, Israel, the United Arab Emirates, China, Japan, and South Africa. Currently, the protocol supports 18 language variations: Afrikaans, American English, British English, Chinese (Traditional), Danish, Dutch, Finnish, French (Belgian), French (Canadian), French (France), German, Greek, Hebrew, Japanese, Norwegian, Spanish, Swedish, Welsh. A version in Arabic is currently under development. The various editions of LibQUAL+® have been used over a period of ten years. Of the tools in the StatsQUAL® suite, LibQUAL+® perhaps brings ARL the closest yet to recognizing Dr. Lancaster’s admonition to “…evaluate their own performance in relation to the needs of their user population.”

LibQUAL+® is in need to be re-purposed to address and assess the services provided by digital libraries. A grant by the National Library Foundation helped ARL initiate research in this area by attempting a summative evaluation protocol for digital libraries. The DigiQUAL® tool researched with support from NSF’s National Science Digital Library (NSDL) Program articulated important dimensions of digital library service quality but has yet to achieve the wide appeal and the promise of bringing together a community of developers and evaluators that focus on success of digital library services from a service and user perspective across different institutions and implementations. Like all the tools in the StatsQUAL® suite, DigiQUAL® is the fruit of multi-institutional collaboration (Texas A&M University, the University of Texas, and ARL as well as NSDL partner projects and services).

ClimateQUAL®. ClimateQUAL®—administered at the University of Texas for the first time in the Spring of 2010—is also the newest protocol in the assessment toolkit. In many ways it harkens back to the days of Duane Webster’s arrival at ARL, the early studies of the Columbia University Libraries, MRAP, and the first visible commitment of the association to organizational development. Born of the work of Paul Hanges of the Psychology Department at the University of Maryland, the instrument originated there as the Organizational Climate and Diversity (OCDA) protocol. Indeed, its library developers, Charles Lowry and Sue Baughman are now Executive Director and Associate Deputy Director respectively of ARL. The dataset is proprietary and belongs to the University of Maryland and ARL. In the words of its authors and owners, ClimateQUAL® “…uses deep assessment of a library’s staff to plumb the dimensions of climate and organizational culture important for a healthy organization in a library setting.” Participants in the protocol commit to share ideas and strategies that promise to improve organizational climate and improve service delivery.
MINES for Libraries®. In some ways, MINES for Libraries®, whose developers are pragmatically aware of the way the information revolution has changed the way researchers and learners interact with the research library is the one protocol that may be the most interesting. MINES stands for Measuring the Impact of Networked Electronic Services. MINES’ roots partly lie in the ARL E-Metrics project, a partnership of ARL and the Florida State University Information Use Management and Policy Institute. Led by Sherrie Schmidt (Arizona State University) and Rush Miller (University of Pittsburgh), the E-Metrics project undertook to create a better understanding of how the growing presence of electronic resources were used by the university community and how they contributed to user success and satisfaction.61 The ARL E-Metrics work was incorporated in the ARL Supplementary Statistics to the extent that the data are focusing on institutional elements (usage, digital libraries, ebooks).62 The user component though of this work is addressed effectively with the MINES for Libraries® protocol.

MINES for Libraries® focuses on the purpose of use of electronic resources, the demographics of the users, and the location of use. The protocol was developed by Brinley Franklin, Vice Provost for Libraries at the University of Connecticut and Terry Plum, of the Simmons School of Library and Information Science,63 and has its roots in a long standing tradition of indirect cost studies. MINES for Libraries® like ClimateQUAL® and LibQUAL+® is accessible to the library community via ARL’s StatsQUAL® portal and the application of the protocol does involve local networking expertise and capacity. It has been successfully implemented in consortia like the Ontario Council of University Libraries (OCUL)64 but it has also been successful as a local institutional application at the University of Iowa and the University of Macedonia in Thessaloniki, Greece.65 As LibQUAL+® measures the lingering commitment of the student to the library as place, MINES for Libraries® acknowledges that many library users are no longer constrained to frequent the physical library to make use of resources that are increasingly accessible digitally.66

This protocol also has the potential of expansion into the new directions library assessment is emphasizing, the valuation studies. Building upon important work by Paula Kaufman67 at the University of Illinois at Urbana-Champaign and Carol Tenopir68 at the University of Tennessee, ARL staff has partnered with them and pursuing a systematic investigation and awareness of library valuation methodologies. Lib-Value is a three-year grant supported with funding by the Institute of Museum and Library Services (IMLS) and attempts to address limitation and expand the perspectives of Return On Investment studies implemented in public libraries and/or sponsored by vendors. The researchers have a broad perspective of library valuation methods and their goal is to expand the debate of these issues over the coming years.69

The Globalization of Assessment
The decade since the ARL forum on Library Service Quality was a period of rapid convergence in library assessment. The important work taking place in North America was mirrored by similar developments in Europe and elsewhere. The International Federation of Library Associations (IFLA) has fostered the conversation through conferences and publications. Roswitha Poll’s influential study Measuring Quality has now been published in two editions and in six languages and serves as a guide to practitioners with many indicators for performance assessment.70 The European tradition is well documented in the biennial Northumbria Conference on Performance Measurement and Metrics.71 From the first conference at
Newcastle in 1995, the rich diversity of research in library assessment was evident. The Northumbria Conference has taken place mostly in the UK but also in places like USA, South Africa, and Italy, as they were scheduled adjacent to IFLA conferences. With each succeeding biennial conference, participation has become more richly diverse. The 8th Conference held in Florence in the late summer of 2009 included some 42 papers from all around the globes. North American presenters included John Bertot, Brinley Franklin, Martha Kyrillidou, Charles Lowry, Steve Hiller, Wanda Dole, and others. Presenters from at least 16 nations contributed to the colloquy.72

In 2006, eleven years after the first Northumbrian Conference, ARL brought to North America its very first Library Assessment Conference. More than 200 participants from seven nations participated—representing over 100 libraries, associations, library systems, or vendors. Some 40 papers were presented on the vast toolkit assembled to assist librarians in their work.73 Paul Hanges keynoted there on his work with the ClimateQUAL® protocol, and Brinley Franklin shared additional information on MINES. In 2008, the stakeholders and participants in the library assessment movement assembled again, this time in Seattle. Some 375 professionals attended from around the globe, and some 65 papers were offered. As the editors of the conference proceedings proudly noted, it was the largest library assessment ever held.74 Here for the first time, and perhaps emblematic of the maturation of the movement itself, the first Library Assessment Career Achievement awards were awarded to Duane Webster, Amos Lakos, and Shelley Phipps.75

More recently the library assessment movement is also reaching communities in eastern European and other African and Asian countries by bringing these communities together in the Qualitative and Quantitative Research Methods in Libraries (QQML) conference. The first and second QQML events took place in Chania, Crete, in 2009 and 2010 respectively. Keynote speakers featured included Peter Hernon and Danuta Nitecki in 2009, W. F. Lancaster, and Roswitha Poll in 2010. The organizing committee is currently planning future events in the coming years.

SUMMARY
And so, for a decade now, ARL leaders and contributing collaborators have been at work developing and promoting innovative means of assessing research libraries, with an eye toward their continual improvement. A methodological suite of protocols has been developed that recognizes and draws upon the descriptive statistics in the ARL Index that trace their roots to the beginning of an earlier century and which now includes such tools as LibQUAL+®, MINES for Libraries®, and ClimateQUAL®. A new generation of assessment experts such as Steve Hiller, Jim Self, Stephen Town,76 Danuta Nitecki, Peter Hernon, Brinley Franklin, Colleen Cook, Bruce Thompson, Betinna Koeper, Sayeed Choudhury contribute to and draw upon the evolving suite of assessment protocols. Colleen Cook77 and Martha Kyrillidou78 have subjected the protocols to the rigor of the dissertation process. And the new leadership of ARL, Charles Lowry and Sue Baugham, bring their own distinguished backgrounds to the challenges of evaluation and assessment.

If there is a hallmark, a defining characteristic of this decade, it is a new era of colloquy – where methodologists from all sectors actively collaborate to advance the assessment of research library
effectiveness. Major contributions to the study of user behaviors over the past decade have been made by OCLC, CLIR and Ithaka. The current conversation is both global and inclusive as practitioners and researchers learn from one another, combining and melding their instruments in order to optimize the investments in and improve the effectiveness of library operations. Jim Self and Steve Hiller have served the library community as Visiting Program Officers at ARL to answer a call critical to our constrained times: “to assist libraries in developing effective, sustainable, and practical assessment programs that demonstrate the libraries’ contributions to teaching, learning, and research.” Open to all libraries, the lessons of sustainability are brought to the local campus by the program officers. Administration of the StatsQUAL® protocols, interpretation of the result sets, development of local assessment plans, preparation for regional accreditation, and the establishment of benchmarks and performance standards are now within the grasp of the local library.

Brinley Franklin re-introduced me to John Cotton Dana whose writings take us back to the beginning of the century, a long journey we have covered all too briefly with this essay. ‘All public institutions,’ said Dana, should give returns for their costs; and those returns should be in good degree positive, definite, visible, and measurable. … Common sense demands that a publicly-supported institution do something for its supporters and that some part at least of what it does be capable of clear description and downright valuation.” It is clear that our best efforts at accountability and demonstrating value and return on investment have not spared libraries from the challenges of the current fiscal climate. What our culture of assessment can do is to allow us to concentrate with precision the assignment of available resources to the goods and services our communities most value. If we listen, and if we act purposefully, we will remain indispensible to teaching and learning.

The Library Assessment Conference in Baltimore offers an opportunity to learn of the additional steps that we in the profession have taken to make our libraries better in service to the communities they serve. We learn how close we have come to answering the admonitions of Mr. Dana and Professor Lancaster, two of the giants upon whose shoulders we stand.

References


5. Carnovsky, 334.


9. Ibid., 18.


18. Broadus, 150.


28. See for example, Chris Argyris, Understanding Organizational Behavior (Homewood, IL: Dorsey Press, 1960). One of many books published by this prolific and influential writer.


32. Ibid, 35-46.


43. Proceedings of the 1st Northumbria International Conference on Performance Measurement in Libraries and Information Services, ed. Pat Wressell (Newcastle on Tyne: Information North, 1995). The editorial board responsible for the planning of the conference included Geoffrey Ford (University of Bristol), Dick Hartley (University of Northumbria at Newcastle), Roswitha Poll (University of Munster), and Ian Winkworth (University of Northumbria at Newcastle).


47. Blixrud, “Mainstreaming New Measures,” 2; Stoffle headed the ARL Statistics and Measurement Committee; Kobulnicky chaired the Research Library Leadership and Management Committee.


49. Kyrillidou, Lowry, Hanges, Aiken, and Justh, 150.


57. Thompson, “The Origins/Birth of LibQUAL+®.”


71. See various proceedings from the Northumbria International Conference.


Are They Learning? Are We?
Learning Outcomes & the Academic Library

Megan Oakleaf (Syracuse University)

Abstract
Since the 1990’s, the assessment of learning outcomes in academic libraries has accelerated rapidly, and librarians have come to recognize the necessity of articulating and assessing student learning outcomes. Initially, librarians developed tools and instruments to assess information literacy student learning outcomes. Now, academic librarians are moving to a larger scale assessment approach: the articulation and demonstration of library impact on institutions of higher education. This article considers six questions relevant to the assessment challenges librarians face in coming years: 1) How committed are librarians to student learning? 2) What do librarians want students to learn? 3) How do librarians document student learning? 4) How committed are librarians to their own learning? 5) What do librarians need to learn? 6) How can librarians document their own learning?

Introduction
In the last two decades the assessment of learning outcomes in academic libraries has accelerated rapidly. Outside higher education institutions, regional accreditation organizations have moved from input and output measures to outcomes-based evaluation. They expect higher education institutions to formulate student learning outcomes, assess the degree to which students attain these outcomes, and engage in a continuous improvement process to meet outcomes over time. As a result, higher education institutions have developed general education outcomes; academic departments have adopted lists of learning outcomes; and co-curricular programs have identified student learning and development outcomes. Over time, academic librarians also recognized the necessity to articulate institutional student learning outcomes, usually in the area of information literacy. Meanwhile, professional associations have identified outcomes that all graduating students should attain, such as the adoption of the Information Literacy Competency Standards for Higher Education. Funding agencies like the Institute for Museum and Library Services have also embraced outcomes-based evaluation for all funded projects; projects must demonstrate that they have a measurable impact on their targeted audiences.

In the last ten years, librarians have progressed by developing tools and instruments to assess information literacy learning outcomes. Traditionally, librarians used surveys and tests to assess student learning. More recently, librarians have embraced authentic performance assessments (e.g., portfolios, research papers, annotated bibliographies, and worksheets) and used rubrics to score them.

Now, academic librarians are moving beyond assessment of individual learning outcomes to a larger scale value assessment: the demonstration and articulation of the impact of libraries on institutions of higher education. In times of economic crisis, the need to show value is heightened, as evidenced by the recent increase in projects, large and small, dedicated to finding evidence of the worth and importance of academic libraries. Still, questions remain:

- How committed are librarians to student learning?
• What do librarians want students to learn?
• How do librarians document student learning?
• How committed are librarians to their own learning?
• What do librarians need to learn?
• How can librarians document their own learning?

How Committed Are We to Student Learning?
While many librarians have dedicated their careers to sustaining students, faculty, and colleagues, the idea that academic librarians have a duty and obligation to be educators is not universally embraced. For example, a content analysis of ARL member library mission statements indicates that only 1/5 of ARL libraries consider teaching a key element of their missions. Many express their desire to support the teaching missions of their overarching institutions using terms like “promote,” “enhance,” “encourage,” or “assist” to describe their efforts to augment institutional teaching missions. However, only 25 ARL library missions state that they actively “teach,” “educate,” or “provide instruction” rather than serving in a limited support role. While library mission statements do not necessarily encapsulate individual librarian beliefs and library service goals, the difference between these positions may indicate important differences in organizational perspective. ARL mission statements indicate two levels of commitment: 1) libraries that cede instructional territory to disciplinary units and provide only secondary, supplemental support, 2) libraries that identify education as a core value, take responsibility for student attainment of learning goals, and consequently define themselves as active agents in the teaching missions of their institutions. While the latter group certainly commits to a more ambitious role on campus, they also can achieve a more stable and powerful position among competitors.

Of course, while not all academic libraries have embraced teaching and learning as a core value that infuses resource and service offerings, many library departments and individual librarians have. For example, virtually all academic library reference and instruction departments provide some level of education for students in the form of face-to-face teaching, tutorials, subject guides, tip sheets, toolkits, reference interactions, online course support, etc. In addition, many libraries have established a list of learning outcomes that all students should achieve prior to graduation, a necessary step in both producing and assessing student learning. Taking together, these examples indicate a degree of departmental and individual commitment to student learning.

What Do We Want Students to Learn?
Librarians who establish and apply student learning outcomes know what they want students to learn. Many librarians look to the Information Literacy Competency Standards for Higher Education for inspiration in writing learning outcomes; likewise, libraries that have established agreed-upon learning outcomes typically base them on the Standards. Although the Standards articulate the information literacy skills students need to acquire during their higher education experience, many faculty and institutional administrators consider them library-centric standards. Therefore, to create value in the minds of students, faculty, and administrators, libraries need to establish their value in terms of academic department and institutional teaching goals by augmenting the Standards with broader views, especially when communicating outside the library organization and within a campuswide context.
To determine which standards will serve to translate library learning values to faculty and administrators, librarians can seek the answers to the following questions:

1. What do institutions want students to learn?
2. What do future employers and graduate/professional programs want students to learn?

To answer the first question, librarians can investigate their institution’s general education outcomes and strategic goals as well as regional accreditation mandates to gain a unique, campus-specific, non-standardized picture of what students at their institution need to be able to know and do before graduation. Likewise, subject specialist librarians can also identify learning outcomes for individual academic disciplines and majors as well as any additional accreditation requirements, such as those created by professional associations and applied to professional schools. Some subject specialists, like engineering librarians at NCSU Libraries, have already experimented with this approach.6 Taken as a whole, the outcomes, goals, and standards produced by institutions, professional associations, and accreditation agencies represent what a particular campus wants students to be able to know and do by the time they graduate.

To answer the second question, librarians can gather information from a wide variety of venues. Librarians can research job postings; follow up on student internship supervisor feedback; or explore the job knowledge, skills, and abilities required for specific job fields. Librarians can also investigate the admission requirements and entering student expectations of graduate and professional schools. Finally, librarians can set alerts to be notified of major publications that focus on higher education such as Raising the Bar: Employers’ Views on College Learning in the Wake of the Economic Downturn.7

In addition to these approaches, librarians can utilize other existing learning standards to define library instructional goals more broadly and match campus learning expectations—without departing from the values of traditional information literacy skills. Clearly, there is a high level of similarity among many learning standards, including the ACRL Standards, AAC&U LEAP Essential Learning Outcomes,8 AAC&U VALUE Rubrics,9 ISTE NETS-S Standards,10 NCTE 21st Century Literacies,11 Partnership for 21st Century Skills,12 AASL Standards for the 21st Century Learner,13 Common Core State Standards,14 exemplary co-curricular standards,15 and CAS Learning and Developmental Outcomes16 (see Figure 1). Not all of these standards use the term “information literacy” to describe necessary student skills. For example, UniLOA refers to “critical thinking” which they define as “an active process where students use skills of evaluating, analyzing, assessing, interpreting, questioning and restating a problem or challenge. A skilled critical thinker should be able to examine and understand the fundamental qualities of problems, collect and analyze critical data, draw appropriate interpretations and conclusions, examine broad-based problem-solving options and effectively communicate and implement appropriate solutions”.17 Certainly, this definition of critical thinking includes many characteristics of information literacy. By emphasizing shared student learning outcomes and standards, librarians can simultaneously teach information literacy content and demonstrate the impact of that instruction on what campuses and employers want students to learn most. Indeed, when librarians ignore artificial academic boundaries and embrace a broader conception of their teaching content, they are more likely to utilize teaching best practices such as presenting material within real-life or disciplinary contexts. Consequently, librarians can achieve—and demonstrate—an impact on student learning beyond their expectations.
### Figure 1. Shared Learning Standards & Outcomes

| Standard 1. The information literate student determines the nature and extent of the information needed. | Inquiry and Analysis - Problem Solving | Inquiry and Analysis - Problem Solving | Students plan strategies to guide inquiry; students identify and define authentic problems and significant questions for investigation; students plan and manage activities to develop a solution or complete a project. | Students use inquiry to ask questions and solve problems. | Identify and ask significant questions that clarify various points of view and lead to better solutions (Learning and Innovation Skills). | 1.1.3 Develop and refine a range of questions to frame the search for new understanding. |
| Standard 2. The information literate student accesses needed information effectively and efficiently. | Inquiry and Analysis - Problem Solving | Creative Thinking - Problem Solving | Students collect and analyze data to identify solutions and/or make informed decisions; students understand and use technology systems; students select and use applications effectively and productively. | Twenty-first century readers and writers need to manage, analyze, and synthesize multiple streams of simultaneous information; students find relevant and reliable sources that meet their needs; students locate information from a variety of sources. | Access information efficiently (time) and effectively (sources); manage the flow of information from a wide variety of sources (Information, Media, and Technology Skills). | 1.1.4 Find, evaluate, and select appropriate sources to answer questions. |

### Table

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inquiry and Analysis - Problem Solving</td>
<td>Inquiry and Analysis - Problem Solving</td>
<td>Inquiry and Analysis - Problem Solving</td>
<td>Students plan strategies to guide inquiry; students identify and define authentic problems and significant questions for investigation; students plan and manage activities to develop a solution or complete a project.</td>
<td>Students use inquiry to ask questions and solve problems.</td>
<td>Identify and ask significant questions that clarify various points of view and lead to better solutions (Learning and Innovation Skills).</td>
<td>1.1.3 Develop and refine a range of questions to frame the search for new understanding.</td>
</tr>
</tbody>
</table>

**ACRL Information Literacy Competency Standards for Higher Education**

**AAC&U Essential Learning Outcomes**

**AAC&U VALUE Rubrics**

**ISTE National Educational Technology Standards for Students**

**NCTE 21st Century Literacies and Curriculum Framework**

**Partnership for 21st Century Skills**

**AASL Standards for the 21st Century Learner**
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard 3.</strong> The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.</td>
<td>Critical and Creative Thinking</td>
<td>Inquiry and Analysis - Synthesizes in-depth information from relevant sources representing various points of view/approaches. Organizes and synthesizes evidence to reveal insightful patterns, differences, or similarities related to focus. Critical Thinking - Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly. Problem Solving - Evaluation of solutions is deep and elegant (for example, contains thorough and insightful explanation) and includes, deeply and thoroughly, all of the following: considers history of problem, reviews logic/reasoning, examines feasibility of solution, and weighs impacts of solution. Lifelong Learning - Makes explicit references to previous learning and applies in an innovative (new and creative) way that knowledge and those skills to demonstrate comprehension and performance in novel situations. Reviews prior learning (past experiences inside and outside of the classroom) in depth to reveal significantly changed perspectives about educational and life experiences, which provide foundation for expanded knowledge, growth, and maturity over time. Integrative Learning - Independently creates wholes out of multiple parts (synthesizes) or draws conclusions by combining examples, facts, or theories from more than one field of study or perspective.</td>
<td>Students evaluate and select information sources and digital tools based on the appropriateness to specific tasks. Twenty-first century readers and writers need to create, critique, analyze, and evaluate multimedia texts; students critically analyze a variety of information from a variety of sources; students analyze the credibility of information and its appropriateness in meeting their needs; students analyze and evaluate the multimedia sources that they use.</td>
<td>Effectively analyze and evaluate evidence, arguments, claims, and beliefs; analyze and evaluate major alternative points of view (Learning and Innovation Skills); evaluate information critically and competently (Information, Media, and Technology Skills).</td>
<td>1.1.5 Evaluate information found in selected sources on the basis of accuracy, validity, appropriateness for needs, importance, and social and cultural context. 1.2.4 Maintain a critical stance by questioning the validity and accuracy of all information.</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Standard 4.</strong> The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.</td>
<td>Written Communication, Synthesis and Advanced Accomplishment across General and Specialized Studies</td>
<td>Written Communication - Demonstrates a thorough understanding of context, audience, and purpose that is responsive to the assigned task(s) and focuses all elements of the work. Demonstrates skillful use of high-quality, credible, relevant sources to develop ideas that are appropriate for the discipline and genre of the writing. Oral Communication - A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter’s credibility/authority on the topic.</td>
<td>Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology; students apply existing knowledge to generate new ideas, products, or processes; students create original works as a means of personal or group expression; students communicate information and ideas effectively to multiple audiences using a variety of media and formats; students contribute to project teams to produce original works or solve problems; students process data and report results.</td>
<td>Twenty-first century readers and writers need to design and share information for global communities to meet a variety of purposes; students select, organize and design information to be shared, understood, and distributed beyond their classrooms; students take responsibility for communicating their ideas in a variety of ways; students share and publish their work in a variety of ways; students create new ideas using knowledge gained; students synthesize information from a variety of sources; students manage new information to help them solve problems; students use information to make decisions as informed citizens; students communicate information and ideas in a variety of forms; students communicate information and ideas to different audiences; students articulate thoughts and ideas so that others can understand and act on them.</td>
<td>Develop, implement, and communicate new ideas to others effectively; synthesize and make connections between information and arguments; interpret information and draw conclusions based on the best analysis; articulate thoughts and ideas effectively using oral, written, and nonverbal communication skills in a variety of formats and contexts; use communication for a range of purposes (e.g. to inform, instruct, motivate, and persuade) (Learning and Innovation Skills); use information accurately and creatively for the issue or problem at hand (Information, Media, and Technology Skills).</td>
<td>2.1.1 Continue an inquiry-based research process by applying critical thinking skills (analysis, synthesis, evaluation, organization) to information and knowledge in order to construct new understandings, draw conclusions, and create new knowledge. 2.1.2 Organize knowledge so that it is useful. 2.1.6 Use the writing process, media, and visual literacy, and technology skills to create products that express new understandings. 3.1.3 Use writing and speaking skills to communicate new understandings effectively. 3.1.4 Use technology and other information tools to organize and display knowledge and understanding in ways others can view, use, and assess.</td>
</tr>
<tr>
<td><strong>Standard 5.</strong> The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.</td>
<td>Ethical Reasoning and Action</td>
<td>Ethical Reasoning - Student can recognize ethical issues when presented in a complex, multilayered (gray) context AND can recognize cross-relationships among the issues.</td>
<td>Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior; students advocate and practice safe, legal, and responsible use of information and technology.</td>
<td>Twenty-first century readers and writers need to attend to the ethical responsibilities required by these complex environments; students create products that are both informative and ethical.</td>
<td>Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information (Information, Media, and Technology Skills).</td>
<td>3.1.6 Use information and technology ethically and responsibly.</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>---------------------------------</td>
<td>---------------------</td>
<td>---------------------------------------------------------</td>
<td>---------------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>General Definition: The information literate An information literate individual is able to:</td>
<td>Information Literacy, Foundations and Skills for Lifelong Learning</td>
<td>Students apply digital tools to gather, evaluate, and use information; students locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media; students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources; students demonstrate personal responsibility for lifelong learning.</td>
<td>Use technology as a tool to research, organize, evaluate, and communicate information; use digital technologies (computers, PDAs, media players, GPS, etc.), communication/networking tools and social networks appropriate to access, manage, integrate, evaluate, and create information to successfully function in a knowledge economy (Information, Media, and Technology Skills); demonstrate commitment to learning as a lifelong process (Life and Career Skills).</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Figure 1. Shared Learning Standards & Outcomes (continued)

<table>
<thead>
<tr>
<th>ACRL Information Literacy Competency Standards for Higher Education</th>
<th>Common Core State “College and Career Readiness” Standards</th>
<th>Penn State Co-Curricular Learning Outcomes</th>
<th>ABET Criteria for Accrediting Engineering Programs</th>
<th>CAS Professional Standards for Higher Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard 1. The information literate student determines the nature and extent of the information needed.</td>
<td>Writing Standard 7. Perform short, focused research projects as well as more sustained research in response to a focused research question, demonstrating understanding of the material under investigation.</td>
<td>Engineering programs must demonstrate that their students attain an ability to identify, formulate, and solve engineering problems.</td>
<td>Knowledge Acquisition, Construction, Integration, and Application – Connecting Knowledge to Other Knowledge, Ideas, and Experiences. Uses multiple sources of information and their synthesis to solve problems; knows how to access diverse sources of information such as the internet, text observations, and databases.</td>
<td></td>
</tr>
<tr>
<td>Standard 2. The information literate student accesses needed information effectively and efficiently.</td>
<td>Writing Standard 8. Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate and cite the information while avoiding plagiarism.</td>
<td>Engineering programs must demonstrate that their students attain and ability to use the techniques, skills, and modern engineering tools necessary for engineer practice.</td>
<td>Cognitive Complexity – Critical Thinking. Identifies important problems, questions, and issues; analyzes interprets and makes judgments of the relevance and quality of information; assesses assumptions and considers alternative perspectives and solutions.</td>
<td></td>
</tr>
<tr>
<td>Standard 3. The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.</td>
<td>Reading Standard 1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text. Reading Standard 2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas. Reading Standard 3. Delineate and evaluate the reasoning and rhetoric within a text, including assessing whether the evidence provided is relevant and sufficient to support the text’s claim. Speaking and Listening Standard 2. Integrate and evaluate information from multiple oral, visual, or multimodal sources in order to answer questions, solve problems, or build knowledge.</td>
<td>Students will apply effective reasoning skills.</td>
<td>Cognitive Complexity – Effective Reasoning. Uses complex information from a variety of sources including personal experience and observation to form a decision or opinion; is open to new ideas and perspectives.</td>
<td></td>
</tr>
<tr>
<td>Standard 4. The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.</td>
<td>Reading Standard 7. Synthesize and apply information presented in diverse ways in print and digital sources in order to answer questions, solve problems, or compare modes of presentation. Writing Standard 6. Use technology, including the Internet, to produce, publish, and interact with others about writing. Writing Standard 10. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes, and audiences. Speaking and Listening Standard 4. Present information, evidence, and reasoning in a clear and well-structured way appropriate to purpose and audience. Speaking and Listening Standard 5. Make strategic use of digital media and visual displays of data to express information and enhance understanding.</td>
<td>Students will demonstrate the ability to integrate and apply ideas and themes across the curriculum and co-curriculum. Students will communicate effectively with others both verbally and in writing.</td>
<td>Practical Competence – Communicating Effectively. Conveys meaning in a way that others understand by writing and speaking coherently and effectively; writes and speaks after reflection; influences others through writing, speaking or artistic expression; effectively articulates abstract ideas; uses appropriate syntax and grammar; makes and evaluates presentations or performances; listens attentively to others and responds appropriately. Knowledge Acquisition, Construction, Integration, and Application – Constructing Knowledge. Personalizes learning; makes meaning from text, instruction, and experience; uses experience and others sources of information to create new insights; generates new problem-solving approaches based on new insights; recognizes one’s own capacity to create new understandings from learning activities and dialogue with others.</td>
<td></td>
</tr>
<tr>
<td>ACRL Information Literacy Competency Standards for Higher Education</td>
<td>Common Core State “College and Career Readiness” Standards</td>
<td>Penn State Co-Curricular Learning Outcomes</td>
<td>ABET Criteria for Accrediting Engineering Programs</td>
<td>CAS Professional Standards for Higher Education</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Standard 5.</strong> The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.</td>
<td></td>
<td>Students will acquire ethical reasoning skills. Students will develop a sense of personal integrity and clarify their personal values.</td>
<td>Engineering programs must demonstrate that their students attain an ability to communicate effectively.</td>
<td>Intrapersonal Development – Commitment to Ethics and Integrity. Incorporates ethical reasoning into action; explores and articulates the values and principles involved in personal decision-making; acts in congruence with personal values and beliefs; exemplifies dependability, honesty, and trustworthiness; accepts personal accountability. Practical Competence – Technological Competence. Demonstrates technological literacy and skills; demonstrates the ethical application of intellectual property and privacy; uses technology ethically and effectively to communicate, solve problems, and complete tasks; stays current with technological innovations.</td>
</tr>
<tr>
<td><strong>General Definition:</strong> The information literate individual is able to:</td>
<td></td>
<td>Students will develop critical and reflective thinking abilities. Students will cultivate a propensity for lifelong learning.</td>
<td>Engineering programs must demonstrate that their students attain a recognition of the need for, and an ability to engage in, life-long learning.</td>
<td></td>
</tr>
<tr>
<td>- Determine the extent of information needed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Access the needed information effectively and efficiently</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Evaluate information and its sources critically</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Incorporate selected information into one’s knowledge base</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Use information effectively to accomplish a specific purpose</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Furthermore, librarians can revise the language they use when communicating the educational value of libraries. Within library walls, the term “information literacy” has gained wide acceptance. On campus, other synonyms may provoke a more positive response. Examples include: “information skills,” “research skills,” “independent scholarship,” “independent research,” “inquiry,” “21st century skills,” or even “lifelong learning.” Indeed, some authors argue that information literacy concepts overlap with many other traditions, such as the scientific method, general research processes, and Bloom’s Taxonomy. Some librarians may argue, with merit, that it is important to teach faculty and administrators what information literacy is and why it should be important to them. In fact, some librarians may be fortunate enough to work with campus partners that are already well-versed in the value of information literacy. For those facing greater challenges, establishing and using a common language that emphasizes shared campuswide values may produce greater success.

**How Do We Document Their Learning?**

Once librarians decide that they are committed to owning an instructional role within their institutions and know what they want their students to learn, the next steps are to engage in instruction and then assess and document impact.

Libraries engage in instruction in various ways. Oftentimes, libraries limit their conception of teaching to face-to-face lessons, online tutorials, and subject or course guides to library resources. Many libraries also recognize the instructional role of reference services, both in physical and digital formats. These instruction and reference services form the cornerstone of library educational efforts. However, traditional instructional services are not the only ways in which libraries contribute to student learning. For example, collections and their associated services (i.e. interlibrary loan and reserves) exist, at least in part, to augment learning. Indeed, because libraries exist within educational institutions, it might be argued that nearly all library resources and services contribute, directly or indirectly, to learning. A helpful tool for librarians seeking to establish the connections between library activities and student learning is a “student learning impact map” (see Figure 2). Librarians might create a student learning impact map by listing library services, resources, and departments along one side of a grid, and student learning outcomes along the other, then filling in how each library element contributes to learning outcomes. Using such a map allows librarians to explore the intersection between library services and student learning and identify opportunities for library impact on student learning.
Figure 2. Student Learning Impact Map Example

<table>
<thead>
<tr>
<th>Standard 1</th>
<th>Standard 2</th>
<th>Standard 3</th>
<th>Standard 4</th>
<th>Standard 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>The information literate student determines the nature and extent of the information needed.</td>
<td>The information literate student accesses needed information effectively and efficiently.</td>
<td>The information literate student critically evaluates information and its sources and incorporates selected information into his or her knowledge base and value system.</td>
<td>The information literate student individually or as a member of a group, uses information effectively to accomplish a specific purpose.</td>
<td>The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.</td>
</tr>
</tbody>
</table>

| Reference Service | X | X | | | |
| Instructional Services | | | X | X | X |
| Circulation | X | | | | |
| Reserves | X | | | | |
| ILL | X | | | | |
| Acquisitions | X | | | | |
| Collections | X | | | | |
| Special Collections & Archives | X | X | | X | |
| Physical Space | | | X | | |
| Other: | | | | | |
Indeed, while libraries have a long history of offering instructional resources and services, both broadly and narrowly defined, they have less experience assessing their impact in ways that have campuswide relevance. In order to avoid library-centric conceptions of instruction, librarians need to view instruction from a campuswide standpoint. From a campus perspective, library impact occurs where campus needs, goals, and outcomes intersect with library resources and services (see Figure 3).

Consider higher education institutions that include critical thinking as a general education outcome. These institutions want to graduate students with strong critical thinking skills. If libraries at these institutions want to contribute to campus goals, they need to leverage or possibly retool their existing resources and services. For example, librarians might recommit to teaching critical thinking skills actively and explicitly via digital reference—by presenting information seeking as a step-by-step problem-solving process and focusing on the analytical or evaluative skills that are key elements of both critical thinking and information literacy. In this scenario, library impact occurs at the intersection of campus critical thinking learning outcomes and a library service that actively teaches critical thinking. Or, consider colleges that have adopted the AAC&U VALUE rubrics to assess student learning. Of course, library resources and services are clearly related to the VALUE rubric for information literacy. However, librarians can also anticipate an intersection with other areas of the VALUE assessment initiative, such as inquiry and analysis. At least three areas of the inquiry and analysis rubric naturally relate to library resources and services:

- **Topic Selection** – Identifies a creative, focused, and manageable topic that addresses potentially significant yet previously less-explored aspects of the topic;
- **Existing Knowledge, Research, and/or Views** – Synthesizes in-depth information from relevant sources representing various points of view/approaches;
- **Analysis** – Organizes and synthesizes evidence to reveal insightful patterns, differences, or similarities related to focus.
Because standard library instruction efforts at most institutions emphasize these three skills, librarians are well positioned to take ownership for meeting such campuswide goals. Librarians who understand institutional needs and correlate those needs to existing or new library contributions can easily pinpoint impact areas.

To reveal the full picture of library impact, librarians need to map all the intersections between campus needs, goals, and outcomes and library contributions in the form of resources and services—in short, all the ways in which the library helps address campus issues. A useful tool for mapping these intersections is a library “mission impact map”. Librarians include campus needs, goals, and outcomes in a column on the left hand side of the mission impact map (see Figure 4), and list library existing services, resources, and departments along the top row. Then, they map where library offerings intersect with campus mission to find points of impact.

![Mission Impact Map Example](image)

As an added benefit, this process can generate ideas for new library resources and services to satisfy unmet campus needs, goals, and outcomes.

Once librarians map points of library impact, the next steps are to assess and document the impact. However, assessing and documenting library instructional impact, particularly in a campus context, can be challenging. Librarians who engage in instruction do not always have direct access to students for the purpose of learning assessment (e.g. librarians who participate in assignment or curriculum design only). Even librarians with access to students often do not
assess student learning, and many do not even design their lessons to accommodate or support assessment activities (e.g., using the Understanding By Design instructional design model\textsuperscript{24}). When they do assess student learning, many librarians do not know how to document their assessment results to create a large-scale representation of how the library contributes to student learning. Developing a student learning assessment plan helps librarians track student learning and devise ways to overcome assessment challenges. For example, assessment plans encourage librarians to consider and discuss:

- What learning outcomes will be achieved?
- What are the target student audiences for learning?
- What opportunities for learning exist?
- What is known about student learning? Not known?
- What methods or tools would best assess learning?
- How will student learning assessment data be analyzed?
- How will librarians know that students have learned?
- Who is responsible?
- What is the timeline for assessment?
- What resources are required?
- What are the results of student learning assessment?
- How will results be presented? To whom?
- Who can make decisions and recommendations based on results?
- What decisions and recommendations are made based on results?
- What is the plan for following through and following up on the decisions and recommendations for change?\textsuperscript{25}

By capturing, tracking, and reporting the answers to these questions in a student learning assessment plan, librarians can record their impact on student learning. Finally, after documenting their impact on student learning, librarians need to communicate that impact campuswide.

**How Committed Are We to Librarian Learning?**

Although much of the focus on learning outcomes assessment is rightfully focused on students, librarians also benefit from engaging in assessment.\textsuperscript{26} By assessing students, librarians determine what students know and are able to do and, as a part of that process, learn to be better teachers and assessors. Furthermore, librarians who engage in impact assessment learn additional skills and strategies. Of course, librarian learning requires effort, time, resources, and support—which begs the question, “How committed are we to our own learning?” Although the need to master assessment skills may be new, librarians’ espoused commitment to the underpinnings of library assessment—theory-based practice, pragmatism, reflective practice, and individual and organizational learning—is not. These theories and philosophies are already deeply rooted in current library practice.

**Theory and Practice**

Most librarians learn about the value of theory-based practice in “library school”. Historically, LIS programs teach library practices within the context of information theories. Theory-informed practice is also supported by the Council for the Advancement of Standards in Higher Education. The Council recommends basing all higher education practices, programs, and
services on theory. Librarians learning to assess student skills can reap many benefits from grounding assessment practice in theory. For example, theory helps librarians to combine logic and intuition with empirical knowledge, provides support and guidance for practice, and “increase[s] the strength and utility of strategic assessment planning.” According to Keeling et al., basing assessment practice on theory “significantly improve[s] the process and outcomes.” Indeed, theory “serves, in practice, to build an essential foundation for assessment planning; assessment purposes, methods, metrics, and reporting are developed on [a theoretical] foundation.”

Pragmatism
Librarians who acquire assessment skills extend their profession’s existing emphasis on pragmatic processes. As a philosophy, pragmatism focuses on how things work best in practice and seeks to discover ways to reliably achieve goals and improve performance. For librarians learning about assessment, “pragmatism serves as a…means to taking more effective actions by improving the accuracy of one’s beliefs about how things actually work in the world. It is a system that draws on lessons learned from experience—in both deliberate and systematic ways—to create knowledge for action. High quality knowledge leads to effective action that works reliably well in reaching performance goals.” A pragmatic approach improves practice by eliminating “defects in beliefs” that cause errors and creating tools to solve problems. Like assessment itself, pragmatism is characterized by “reiterative learning-based processes” similar to this pragmatic step-by-step framework for taking productive action:

1. Thoughtfully interpret one’s environment.
2. Learn from experiences.
3. Reflect on past experiences.
4. Imagine how patterns of cause and effect might impact future experiences.
5. Engage in inquiry to reduce doubt.
6. Take targeted action to achieve a desired result.
7. Use reasoning to apply or create new rules for action.
8. Build knowledge through experimentation.
9. Improve one’s knowledge by incorporating discoveries from action.

Librarians who use assessment to improve their practice adhere to pragmatist philosophy.

Reflective Practice
Not only do librarians who learn to conduct assessment align themselves with pragmatic philosophy, they engage in reflective practice. Researchers use many terms to describe reflective processes: reflective practice, reflection-in-action, metacognitive reflection, reflective learning, critical reflection, and reflective thinking. By any name, reflective practice usually begins with a problem or “situation of complexity, uncertainty, instability, uniqueness, or values-conflict” and a decision to find a solution. Next, practitioners seek information about the problem and decide to act. The last step is to take action. Thus, the result of reflection is action-oriented: Rogers states “Ultimately, the intent of reflection is to integrate the understanding gained in one’s experience in order to enable better choices or actions in the future as well as to enhance one’s overall effectiveness.” Like the assessment cycle, reflective
practice is ongoing. In fact, according to Dewey, solving problems through reflection often requires multiple cycles of trial and error.

Librarians employing assessment as a learning tool can use several methods to facilitate reflection. They include mentoring, structured experiences, group discussions, critical incidents, role analysis, and communities of practice. These methods are most powerful in an environment that fosters reflection and "autonomy, feedback, access, and connection to others, stimulation by others, and significant performance demands." One of most difficult challenges of reflective practice is to create an environment where assumptions can be broken—assumptions that are often ingrained in personal or organizational norms. However, the risks of not engaging in assumption breaking and reflection are dire; according to Hammer and Stanton, "Although successful organizations fail in many different ways, all these failures share one underlying cause: a failure to reflect."

Conversely, librarians who embrace reflective practice reap numerous benefits including greater change capacity; more freedom of action; improved flexibility, productivity, and innovation; new perspectives on experience; changes in behavior; increased commitment to action; and increased learning. In fact, some researchers consider learning the major outcome of reflection. Marsick and Watkins consider reflection a facilitator of informal learning; Mezirow believes reflection results in transformational learning; and Schon asserts that reflection contributes to professional learning.

**Individual and Organizational Learning**

Library assessment reflects a professional commitment not only to pragmatic and reflective practice, but also to individual and organizational learning. On an individual level, assessment closely mirrors the constructivist learning process. According to constructivist learning theory, "problem solving is at the heart of learning, thinking, and development. As people solve problems and discover the consequences of their actions—through reflecting on past and immediate experiences—they construct their own understanding." Kenny asserts that constructivist approaches to learning are appropriate when individuals confront transformational change "as, by definition, no one knows what the solution will be; there is no expert to transmit the knowledge; it must be created by the individuals within [an] organization."

When assessment is an organizational process, not just an individual one, it leads to organizational learning. Learning organizations are "skilled at creating, acquiring, and transferring knowledge and at modifying its behavior to reflect new knowledge and insights." Learning organizations have systematic problem solving strategies, use data for decision making, and embrace a habit of experimentation. They learn from the past and from others, and they circulate knowledge throughout their organization. Learning organizations support life-long learning, accept and expect learning from mistakes, and encourage creativity as "fundamentally critical to successful innovation." They are characterized by "empowerment, openness, team member dialogue, supportive risk-taking environments, appreciative inquiry, and distributive leadership."

The concept of a learning organization is relevant to all twenty-first century organizations, but "it is critical that libraries become learning organizations." When libraries become learning
organizations, they minimize complacency; maximize continuous learning, improvement, and innovation; promote inquiry and dialogue; facilitate collaboration; create systems to share learning; focus librarians on a unified vision; and connect the library to its environment.

In order to build a learning organization based on assessment, libraries must have supportive leaders and skilled librarians. For example, libraries require leaders who nurture organizational learning in the area of assessment, communicate a vision, commit to change, connect learning with library operations, capture and reward learning, and ensure sharing of knowledge. Librarians also need discretionary time to learn and opportunities to work collaboratively with educators in other disciplines. Jain and Mutula summarize the skills librarians need to make the most of academic libraries that are also learning organizations. These include: “team skills, public relations and communication skills, ability to think in terms of the enterprise (strategically), creative thinking, use of new technology and information tools effectively, ability to train and educate the client effectively,…and the capability of working effectively in partnership with faculty members and other stakeholders.” If achieved, organizational learning is a “means for achieving success in turbulent times.”

Certainly, there is “no one best theory—and there is no one best way to apply theory to assessment.” Pragmatism, reflection, and learning theories all underpin library practices, including assessment. However, other theories, philosophies, and paradigms also align well with assessment. For example, assessment of student learning is rooted in assessment theories including “assessment for learning”, “assessment as learning”, and “assessment as learning to teach”. To assess, demonstrate, and articulate the impact of libraries on institutions of higher education, librarians would do well integrate all these concepts into their professional culture.

What Do Librarians Need to Learn?
In order to act in accordance with their espoused theories and practices, librarians need to learn new impact assessment skills. But, exactly what skills do they need to learn? Although this question merits deeper study, an initial list of important impact assessment skills might include:

- Developing an assessment plan.
  - Identifying the purposes, values, or theories guiding assessment activities.
  - Linking assessment activities to institutional and library planning documents.
  - Establishing resources for assessment activities.
  - Setting data privacy and other ethical use policies.
  - Scheduling ongoing assessment activities based on an agreed-upon assessment cycle.

- Conceptualizing library impact on learning.
  - Articulating student learning outcomes addressed by libraries and librarians as well as academic faculty and student affairs professionals, independently and in collaboration with academic faculty or student affairs professionals.
  - Defining library impact in an institutional context.
  - Articulating questions about library impact.
  - Matching questions about library impact to appropriate assessment methods.

- Defining an action plan for an assessment activity.
  - Identifying an outcome to assess.
  - Determining the scope of assessment.
Checking for existing data.
Determining the assessment method.
Deploying assessment methods.
Gathering student learning assessment data.
Analyzing data.
Preparing a results report.
Applying student learning assessment data to make decisions and take actions that will increase student learning and continuously improve instructional programs.
Managing student learning assessment data over time, programs, departments, etc.

- Identifying assessment tools that measure student learning such as tests, rubrics, and performance/artifact assessments, independendy and in collaboration with academic faculty or student affairs professionals. Other basic assessment methods include:
  - Observations
  - Interviews
  - Focus groups
  - Surveys
  - Artifact analysis (e.g., documents, transactions, logs)

- Communicating library impact.
  - Identifying valid, reliable, and relevant results.
  - Reporting student learning assessment results to stakeholders including librarians, academic faculty, administrators, students, parents, accreditors, etc.
  - Using impact results to market the library to academic faculty, administrators, students, parents, and other stakeholders.
  - Utilizing impact results to gain resources needed for improvement.

- Seeking assistance from assessment experts as needed.

Among the most challenging student learning assessment skills are the management of student learning assessment data, the application of that data to make decisions and take actions to increase learning, and the creation of results reports for stakeholders. Ironically, librarians, who excel at documenting information, find the documentation of learning, especially what they’ve learned from student assessment, somewhat challenging. Happily, systems exist to aid librarian efforts to manage, apply, and report what they have learned about assessing and improving student learning.

**How Can Librarians Document Their Own Learning?**

Assessment management systems (AMs) exist to help academic faculty, student affairs professionals, and librarians design, document, and report assessments. AMs not only track what assessments reveal about student learning, but also about what assessors learn as a consequence of the assessment process. In other words, they record information about student achievement of learning outcomes as well as documenting assessor decisions and actions—in short—what assessors have learned.

Several AMs exist and they share many common features. AMs are typically organized around a tree structure based first on organizational units (programs, departments, schools, or the entire institution), then on the goals and/or outcomes of those units. In an AM, goals and outcomes can cover learning as well as other strategic areas (see Figure 5). Permission-setting
allows different AMS users to access distinct system areas, either revealing data for large-scale results across programs or protecting information entered by individuals.

Figure 5. AMS Hierarchy Example

Perhaps most importantly, AMSs capture the decisions librarians make in response to their assessment learning, the actions that they pursue based on their learning, and the documents that record their learning over time. AMS examples include WeaveONLINE, TracDat, LiveText, eLumen, Tk20, Waypoint Outcomes, Blackboard Learn’s assessment module, OATS from Georgia Tech, openIGOR from Coker College, and AMS from TaskStream.

For librarians, AMSs organize assessment data in ways that facilitate documentation, action, and reporting. For example, many librarians assess student learning using informal methods such as Classroom Assessment Techniques, worksheets, or observation. Without an AMS, such assessment findings are viewed only by individual librarians, then maintained in files inaccessible to others or discarded. As a result, much assessment-based librarian learning becomes tacit knowledge, which is difficult to surface and share on an organizational level. By documenting informal (and formal) assessment results in an AMS, librarians gain “the ability to turn tacit knowledge into explicit, codified knowledge that can be shared through different kinds of systems, including those that are more data-based and others that are more relationship-oriented such as communities of practice.”

AMSs enable librarians to share existing assessment data “so that others can benefit from what individuals have learned” and transform their libraries into learning organizations. Skyrme defines learning organizations as
organizations that have in place systems, mechanisms and processes, that are used to continually enhance their capabilities and those who work with it or for it, to achieve sustainable objectives—for themselves and the communities in which they participate." In order to capture, document, and report assessment data—transforming individual librarian learning into actionable organizational learning—libraries should adopt AMSs or similar systems. Indeed, the current absence of such systems in libraries is a serious impediment to librarians’ ability to learn from assessment processes.

Conclusion

Today, librarians face a new assessment challenge: to articulate the value of academic libraries within an institutional context. To demonstrate the impact of academic libraries on student learning, librarians need to commit themselves to playing an active role in teaching students. To teach and assess student learning, librarians should begin with a list of outcomes that describe what they want students to learn and then target them in their instruction and assessment efforts. Next, they should employ impact maps and assessment plans to determine how those outcomes intersect with institutional, departmental, co-curricular, or accreditation needs, goals, outcomes, and standards. In order to take these steps, librarians may need to acquire additional assessment skills. Fortunately, librarians’ existing culture of pragmatism, reflection, and organizational learning can serve as a basis for any new assessment strategies librarians must learn. Finally, librarians can employ assessment management systems to facilitate the recording, analysis, and documentation of library impact at their institution. Clearly, the assessment of student learning—and the acquisition of librarian assessment knowledge—is challenging, but it is also has the potential to revitalize academic librarians’ role on campus. Are students learning? Yes. Are we? Definitely. And we’re just getting started.

References


30. Ibid., 15.


32. Ibid., 477.

33. Ibid., 481.

34. Ibid., 482.

35. Ibid., 478.


42. Ibid., 44.

43. Ibid., 41.


49. Seibert and Daudelin, *The Role of Reflection*.


51. Hammer and Stanton, 291.


54. Rogers, 47.


57. Schon.


61. Garvin, 81-89.


66. Jain and Mutula, 12.


73. Ibid., 12.

74. Austin and Harkins, 105.

75. Keeling et al., 15.


77. Oakleaf, "Writing Information Literacy Assessment Plans."

78. Oakleaf, “The Information Literacy Instruction Assessment Cycle.”


86. Marsick, 272.
Space Assessment as a Venue for Defining the Academic Library

Danuta A. Nitecki (Drexel University)

This chapter offers a framework to consider different factors affecting library space assessment, and insights for undertaking a meaningful inquiry about the relationship of space to an academic library’s purpose and ambitions. The paper proposes multiple paths for approaching such assessment, differentiating the assessment’s purpose, types of questions posed by it, data gathering methodologies, and reporting strategies of results, by the perspectives posed by it, data gathering methodologies, and reporting strategies of results, by the perspectives on the library’s purpose. These paths are useful to gain insights into the evolving role of the library and its contribution to the academic enterprise. Not surprisingly, the inquiry turns as well to changes in the identity of librarians as separate from the building where they work. A tool emerges from this essay’s discussion. It suggests the nature of key elements of an assessment associated with different library paradigms: “as reader-centered, book-centered, and learning-centered.” These three perspectives on the library’s function are briefly outlined with related assessment perspectives in sections entitled “space for accumulation, space for service and space for learning.” Research that defines library spaces and the role of academic libraries is in its nascent stages and future inquiry is encouraged building on conceptualizations of the Japanese concept of “ba” thought of as a shared space to build relationships and advancing both individual and collective knowledge. Methodologies for assessment of library spaces are becoming expansive and exciting and have potential to advance the conversations beyond the building to the very essence of the library.

Much has been written about the changing paradigms of the academic library—as accumulator and preserver of knowledge resources, service provider for accessing information, and facilitator of intentional learning and knowledge creation among its visitors. For each of these missions, the spaces of the library, whether physical or virtual, have been constructed and adapted with the hope of improving capacity to contribute to the university. Typically such building processes, at least within physical facilities, are guided with direction from planners, architects and interior designers. Collectively they provide protocols and professional standards to create program plans, construction documents and ultimately the basis for ribbon cutting celebrations. Virtual library spaces are evolving with similar “architects” and development procedures to launch dynamic environments for the parallel functions of digital archives and repositories, retrieval and delivery systems, and social learning and research communities. Librarians have engaged to varying degree in these processes, some having developed insights to do so with a specialized expertise that directs the definition of the library in terms of its architecture. As Hartman observed a decade ago, ‘Libraries today are in transition both as institutions and as a building type.”

What is less established in practice is purposeful assessment of library space for the understanding and improvement of the academic library it houses. This chapter will offer a framework to consider different factors affecting such an assessment, and insights for undertaking a meaningful inquiry about the relationship of space to an academic library’s purpose and ambitions. It aims to explore the complex and sometimes foggy intersection of two components of this relationship. On one hand, applied research has protocols to conduct
program and outcome assessments, and on the other hand, there is an assumption that space and environment influence an institution’s program and the subsequent behaviors of those who benefit from that program. Published accounts of library building programs, reflections on the changing orientation of academic libraries, and attempts to assess physical library spaces have influenced the preparation of this essay. It proposes multiple paths for approaching such assessment, differentiating the assessment’s purpose, types of questions posed by it, data gathering methodologies, and reporting strategies of results, by the perspectives on the library’s purpose. These paths are useful to gain insights into the evolving role of the library and its contribution to the academic enterprise. Not surprisingly, the inquiry turns as well to changes in the identity of librarians as separate from the building where they work.

Research is a systematic and purposeful process of data collection and analysis. More specifically, assessment utilizes data for description, sometimes in terms of established criteria. By contrast, evaluations occur when judgments are made using data gathered. The terms are used with mixed clarity in the literature, and thus often interchangeably. Both processes may be considered applied research, but if taken away from a specific context for problem solving or managerial decision-making, their empirical basis may contribute to the formation of theory to explain or predict. Formal inquiry about library spaces has only recently begun to be conducted and reported, suggesting spaces mostly have been subjected to descriptive assessments, with few sharable evaluations or evolved theories to inform practice.

Assessment or evaluation typically occurs for constructing or remodeling spaces at one of two stages—in advance, to inform design, and in conclusion, to judge and possibly improve the end product. These two functions are informed by two different types of evaluation research. Formative evaluation provides developers information for the formation or improvement of something [e.g. product, service, building design] while summative evaluation examines the effects of the object, confirming that the intentions of goals are met by summarizing or describing what happens after the process or program has been delivered. Formative evaluations tend to involve qualitative methods of data gathering and include for example, needs assessments, conceptualizations, and process investigations. Summative evaluations rely more on quantitative data gathering and involve analysis of deliverables, outcomes, impacts, and cost effectiveness.

A tool will emerge from this essay’s discussion. It will suggest the nature of key elements of an assessment associated with different library paradigms. To clarify the basis of differentiating the assessment pathways described in this essay, three perspectives on the library’s function will be briefly outlined, as will the basic elements of applied research, which includes assessment. The assessment paths will be illustrated by examples from the literature, where identified, and a “meta assessment” framework will be suggested for interpreting the utility, feasibility, propriety and accuracy of each assessment approach. The essay will conclude with suggestion of areas not well covered yet in the literature and thus ripe for future research.

1. Changing library paradigms
Scott Bennett develops a compelling argument that the history of library space design reflects three distinct paradigms which he characterizes as reader-centered, book-centered, and learning-centered. He illustrates the progression in the physical organization and appearances of libraries
in terms of their corresponding purpose: to bring together readers and books in part by providing rooms needed for their reading, reflection and contemplation; to build and shelve large and growing collections; and to embrace the emerging opportunity to address the “transformational character of intentional learning” by “making learning happen” in the library.²

These three perspectives on aligning library space with the role of the library loosely parallels an earlier service model that Danuta A. Nitecki and William Rando developed from empirical study of the impact of using digital images in the teaching of American studies. Their service rubric identifies three levels of library service as collection building, information consulting, and knowledge transformation.³ The role of the librarian [and by extension the mission of the library] evolves these service levels to focus on acquiring, organizing and preserving information resources; on interpreting client needs and providing guidance to locate and access information to meet their individual requirements; and on building partnerships to maximize the institution’s ability to create and share knowledge in the service of research, teaching and intellectual growth. In the model’s characterization, space explicitly appears only as an infrastructural requirement at the first service level where it is essential for housing collections and records describing information with user accessibility. It becomes superseded in importance as an infrastructural requirement by retrieval and communication systems, and social and technological networks. The authors’ investigation and conceptualization of a future role of the library informed the redesign of a library at Yale University and the implementation of a Collaborative Learning Center within it that has become a popular virtual and physical environment for exploration of learning activities and outcomes involving the library in partnership with educators and service providers interested in learning outside the classroom.⁴

A predictive framework also emerged from examining changes in accreditation and assessments. Nearly a decade ago, Kathlin Ray,⁵ referenced the work of Ralph A. Wolff⁶ and placed four paradigms along a timeframe representing a postmodern philosophical review of libraries. In her model, the library accentuated values at key moments in its history which emphasized resources or holdings [before 1980], access [1980], use by students [1995], and learning transformation [predicted for 2010].

A non-profit group, Ithaka, has conducted its Faculty Survey every three years since 2000, in which it has posed questions about the perceived importance of library functions among faculty in U.S. institutions offering bachelor and higher degrees.⁷ The Ithaka researchers have longitudinal evidence for three traditional functions which they label “gateway” as a starting point for locating information for research, “buyer” role that pays for information resources, and “archive” function to preserve and keep track of resources.⁸ The 2009 survey introduced two additional roles to evaluate the impact of transformative services. Although still articulated as “support,” they introduce the two roles of providing collaborative services to facilitate teaching and help increase productivity of research and scholarship. A comparison of data from 2003, 2006, and 2009 surveys indicate that the importance of the gateway role has dropped, the archival role has stayed somewhat the same, and the buyer role has increased.⁹ In the latest survey, the newly introduced “teaching support” and “research support” are perceived as important library roles by equal numbers of respondents but far less frequently than that of “buyer” and “archive” roles.¹⁰ Responses to specific questions about the starting point for faculty research also indicates low importance given to the library building, with steady drop in
this perception over the decade of surveys. Coupled with a similar drop in already low importance given to the library’s catalog, the researchers observe that the role of the library to license network access is a technicality and behind the scenes and is not perceived as an important gateway function. Given the low response rate [8%] and potential imprecision of the definitions of roles, to make any generalizations about the importance faculty place on library missions should be done with caution. However, this large scale study highlights the transitional changes in the library paradigms and specifically, the importance of its space.

Collectively, these models suggest at least three distinct activity-based functions that define the library, whether viewed as its core mission, or simply as acknowledged major coexisting roles. For purposes of this essay, these will be categorized as the role of accumulator [of books, equipment, and other information carriers], service provider [for retrieving information and borrowing materials, instruction, and other customer assistance for accessing knowledge], and facilitator [through design of environments and nurturing of relationships that foster self-directed learning and creation of new knowledge].

2. Changing focus of space assessment
Library spaces change slowly. But such changes among campus libraries are evident and follow planning and design processes that are at their best when informed by conceptualizations that articulate not only what to place within the space, but also what will happen there as a result of interactions between people and their environment. Identifying both the content and the engagement of space are critical to designing it. The paradigm shifts in the purpose of the library suggest different visualizations and requirements for these environments. The processes to assess [through formative research] the requirements of content and activity, as well as to evaluate [through summative research] the success of meeting the envisioned resulting library will vary according to the paradigm of what the library is intended to be. To add to the complexity of the assessment challenge, changes in library spaces are seldom mutually exclusive of existing spaces, and thus assessments may need to factor overlapping intentions. Space also entails existing cultural expression of the social groups or individuals that come to environments to do something purposeful. Conceptualization of the symbolism, feelings and identity, for example, embodied in the cultural meaning of specific environments [such as associated elevated reverence for knowledge, joy of learning, or the importance of concentration, comfort, and aesthetics] are important to design successful spaces.11 Like space development, assessment itself is an evolving and flexible activity. The challenge is to adapt the proven assessment construct and techniques to understanding and monitoring space as an expression and enabler of the variations of what a library aims to be.

3. Basic elements of an assessment
Inquiry in library topics have most often followed the approach of applied research in the social sciences. Though there is no one universally accepted description of this approach, it is communicated through guidelines for research publication, dissertations, and sometimes reports of funded activities. Its seven common elements are briefly described here as suggestion for how to frame an assessment of library space.

1) A problem statement sets the context and purpose for which an assessment is undertaken. It should address four functions. The lead in sets the stage and entices the reader [the stakeholders]
to engage in the communication of the assessment. An assertion of originality identifies the assessment’s uniqueness and how it will add to knowledge about the target of inquiry. Direction highlights the approach that the assessment will take to gain insights useful to taking action. Reflection on the significance of the assessment justifies why it should be undertaken and advocates the value its findings will provide decision makers to improve the library space.

2) A literature review is not only a process of identifying and reading publications on a topic. A good review synthesizes what is known about the focus of inquiry. For an assessment of library space, such review should identify insights already gained about elements of space and the functions they aim to address, theoretical constructs that inform understanding of the spatial manifestation of library programs and purpose, and methods used to conduct assessments which might be helpful to replicate or modify in particular library settings.

3) The objectives for the assessment will generate specific questions to be addressed. Those objectives that aim to identify space needs or user perceptions for example will generate research questions, whereas assessments that seek to compare conditions or behaviors for example with standards and benchmarked practices, might generate hypotheses. Most library space assessments are descriptive in nature and are guided by research questions, avoiding the need to apply inferential statistical analysis to hypothesized conditions. Questions may presuppose conditions for which space needs to be planned, as for example, “How much shelving will be required to house collections?” “What is the number of students at a given time that will need group presentation rooms and how large are their study groups?” “What levels of light are needed for different library activities?” Forming the questions is critical to design a useful assessment. Questions are not merely posed to meet interest in using existing data or applying a convenient method for gathering new data, but provide specific directions to address the purpose of the assessment.

4) These first three elements influence the design of what will actually be done in conducting an assessment. Procedures and methodologies build on well established and tested protocols for gathering reliable and valid data. Issues of implementation such as the staffing and expertise needed to manage and undertake the project, timing when data gathering is least disruptive to users and staff [but when it also is most likely to yield meaningful results], and funding and other resources available to conduct the assessment, when addressed in this design planning stage will improve the likeliness of generating useful results from the assessment effort.

5) Once conducted, the first step of handling the results of an assessment is to present the findings. The selection of how much and what to include in a report is dictated by the purpose of the study and also its stakeholders, considering the amount of time and effort they will have available to absorb the findings [whether through reading or listening]. Selection and synthesis of what is most relevant to the problem and questions articulated earlier call for basic analytic and communication skills. Use of charts or tables, numbers or narratives, words or images, should be employed based on the organization’s culture, including the receptivity of stakeholders for data. At this stage, only the facts, without bias and interpretation should be presented.

6) A discussion of the findings in response to the questions posed for the inquiry follows. Interpretation of the data gathered becomes evidence toward formulating insights about what is
known. Data gathered for example about the way students use group study spaces have generated insights into unanticipated behaviors such as a “study along” quiet but coexisting engagement among a group of students within library social spaces. The implications for designing areas should be discussed as a valuable outcome of the assessment.

7) Conclusions are not merely a summary of what was done and insights gained from an assessment. This closing section to the assessment report is where arguments for change or confirmation of strategies underway are made. Next actionable steps are recommended. The implications of “why bother” with assessment should be obvious in presenting the value of the effort.

These steps and intentions frame applied research, but are equally important to guide the practical efforts of developing information for responsible management. Making decisions with evidence is a wise strategy especially whenever risks are high. Shaping library space through new construction, renovation, or even minor adjustments to placement of items [furniture, equipment or people] within it are among the most costly managerial activities library administrators face. They require investment of time, political capital, and funds that are seldom insignificant. These investment costs are relatively high and their worth is judged by resulting returns. A major assumption in thinking about the importance of assessment of space on not only delivery of library services, but also on demonstrating the vision of the academic library, revolves around the value that evidence offers decision making. Thus the effort to plan and the discipline to execute an assessment approach that will generate relevant evidence should be grounded in tested practices. Assessment of library spaces turns to the practices of experts in the design and construction of architecture, in marketing and improvement of service quality, and in the education of learning and creation of new knowledge.

4. Paths to assessing library space
This essay asserts that depending on the perspective of what the library intends to be, the approach to assessing the requirements or success of its space will be different. To explore this proposition, this section will review adaptations of the first four core elements of an assessment suited for the three perspectives on the role of the library. For each perspective, an attempt is made to identify the core purpose for an assessment [highlighted in problem statements], some unique challenges in understanding spatial elements associated with the library role [emerging from the review of literature and observed practice], illustrative questions to address in the assessment approach, and procedures and methodologies useful to address them.

Academic libraries are not standardized but rather are customized to embrace their role in their college or university’s culture and enterprise of education, research, public service, and management of relations with their multitude of stakeholders. One possible consequence of this uniqueness, combined with the formative stage of library space assessments, is that it is difficult to uncover uniform or definitive conclusions about how space design supports libraries in their provision of services. Literature reviews conclude that little exists about best practices or recommended approaches to evaluating library spaces\textsuperscript{12} or their relation to learning.\textsuperscript{13} Traditional advice about planning and designing a library, without filtering for the library paradigm, is to begin with a “needs assessment” of the library’s services. Data gathered from this provides the basis for the design process. There are numerous guides on this process,
particularly for public libraries where taxpayers and trustees require extensive justification for expenditure of public funds. The size and type of collections projected for decades in the future, the demographics of populations expected to be served, and the structural requirements of a public building are among the type of topics addressed. Analysis of the data gathered includes pricing of options and forming value judgments in recommendations about whether to build new or remodel old spaces, and about the extent to which value will be gained in doing so. Such planning exercises prior to space designing are important assessments for data based decision making among responsible administrators. This approach to assessment of public libraries may be grounded in a more commonly held and consistent perspective of the role of the library than is found among academic libraries.

Attempts at articulating standards for academic library buildings tend to be general and not precise enough to inform design or to account for investment in construction. The Association of College and Research Libraries [ACRL], for example, provides general statements about facilities that guide requirements for libraries in academic settings:

The library facility and its branches should be well planned; it should provide secure and adequate space, conducive to study and research with suitable environmental conditions for its services, personnel, resources and collections. The library's equipment should be adequate and functional.\textsuperscript{15}

Similarly among the ten questions posed in these ACRL standards to consider in assessment, three are interspersed and relate to the functions of a building, regardless of the program it houses.

Are building mechanical systems properly designed and maintained to control temperature and humidity at recommended levels? …Is there enough space for current library collections and future growth of print resources? …Are electrical and network wiring sufficient to meet the needs associated with electronic access?\textsuperscript{16}

The actual results of assessments, the discoveries about space requirements or criteria adapted to design spaces in specific libraries, will be noted only to the extent that they suggest generalized insights contributing to knowledge about the contribution of space to fulfilling the library role. In its formative stages, research design for library space assessment is frequently exploratory in nature and results cannot be generalized beyond the case studied. Thus results will not be reviewed in detail here; some sources identify general findings.\textsuperscript{17}

Similarly, reporting strategies to utilize the findings in managerial decision making toward improving library spaces will also be omitted from this discussion of pathways to space assessments. In general, the details of how space accommodates a library’s program are locally determined when and if an assessment is undertaken.

With most contracted projects, building construction concludes with an assessment of the project, identifying through “punch lists” of items not delivered to specification, the areas that require adjustments to the facilities. Such assessments are not unique to the library program, though some guides for librarians include advice on a slightly expanded architect’s “post occupancy evaluation” that returns to satisfaction with supporting the program objectives. William Sannwald, for example, with varying degree of detail about this “process of diagnosing
the technical, functional, and behavioral aspects of a completed building in order to accommodate information for future programming and design activities,” devotes a chapter in the different editions of his Checklist of Library Building Design Considerations. The factors considered revolve around contractual and business obligations, such as the completion of the building project on time and within budget, the architect and contractors’ performance and responsiveness, and the degree of delivery and adjustments made to meet the library’s program. Though desirable, few library building projects include Sannwald’s recommended final evaluation factors that address whether the building was:

- Planned and designed to reinforce the library as a center of the campus or community?
- Designed to provide for comfort and health as well as safety and security of the campus or community?
- Designed to make effective use of all available resources?
- Designed to address changing library needs over time by permitting flexibility and adaptability?19

These assessment factors suggest a focus on the impact of the space on the library. Compared to the earlier noted general “standards” for facilities or elements of “needs assessment” these implied questions of impact become clearer depending on the different perspectives about the library’s purpose. Here, three such core library functions will be reviewed—accumulating knowledge, providing services, and fostering learning.

4.1. Space for accumulation

The metaphor of libraries as warehouses for the artifacts of knowledge has a long and rich history in defining the academic library. The most famous library buildings include spatial solutions to house vast collections. This can be found in accounts of the ancient Library of King Ashurbanipal at the city of Nineveh where in the 600s BC tens of thousands of cuneiform tablets were housed in organized fashion or in the 7th century Chinese founding of the Buddhist scripture on tens of thousand stone tablets stored in caves at the Yunju Temple for over a thousand years. More modern visions of a great library have been set by such famous examples as the Library of Congress, the British Museum, or the French National Library, each handsomely providing space for “stacks” of shelving to house organized collections of physical books, journals and other formats of accumulated collections of information resources.

The need for shelving books offers an opportunity to design beautiful facades and architectural detailing that helped establish the important and central role of a library on a campus. In his insightful review of the history of library architecture at Yale University, the architect Robert A. M. Stern acknowledges the potential institutional importance both to the library and to the university that a building offers. As he points out, the first building to solely house books and readers elevated the “University Library to the status of a department equal to other academic departments.” Furthermore the design intentionally deviated from the common red brick Georgian style that had become associated with utilitarianism of New England mills to instead adopt the Gothic style, seen by some as “an antidote to utilitarianism but also as a means …to construct a building with ‘pretensions to architectural beauty,” as assessed by a contemporary who was also a former Yale student [Lyman Hotchkiss Bagg, class of 1869]. The assessment of this associated role of the library as an icon to the historic purpose of housing books for people to
read may in part be gauged by expressions of donor support, as fund raising for library buildings includes naming opportunities and places to exhibit the appreciation and endearment of generous benefactors to the university.

But this aesthetic luxury gave way to other constructions where the function to house collections drove design. During the past quarter century, for example, the requirements for massive housing, primarily of print materials, have been studied and applied to the design of facilities dedicated to the efficient use of space to shelve organized collections, in environments conducive to their long term preservation, and typically off campus or on less valued real estate than a reader-oriented library. The Harvard University Library Depository established the best-practice model for numerous off-campus, high efficiency shelving facilities for infrequently used research materials. Yale University, the Library of Congress, and the collaboration among Princeton and Columbia Universities with the New York Public Library are but a few institutions that followed and improved this model. It defines library space focused on this classic accumulation function without special concern for overlapping intentions of bringing readers and books together in that space. As these facilities evolved, problems requiring research addressed issues of preservation as well as delivery of materials to readers no longer proximate to the collections. As Paul Conway observed, commitment to preservation is what distinguished this library building type from warehouses. He suggests a corollary to the accumulator paradigm by envisioning the “library building as a preservation tool” in his detailed discussion of basic experimental science and practical experience as methods undertaken to understand the relationship of temperature and relative humidity, as well as other environmental factors such as light, pollution and particulates. Furthermore, he extends the inquiry to the care and handling of materials to transport them to and from the reader. Research continues in experimental settings, to identify other issues of space housing, such as fire monitoring and suppression, particularly examining the requirements for using water or gas and the associated fire rating of materials surrounding condensed masses of paper.

The problems driving assessment under this paradigm have become ones of physics, material science, and operations with such questions as follows. How secure are buildings to withstand earthquakes? What distancing of sprinkler valves will provide needed response to fire? What effect do different levels and types of lighting have on print materials? What are set points of temperature and relative humidity that will extend the life of the book furthest in time? What amount of cleaning to remove particulates from incoming books offers the most preservation? Staff responsible for shelving (whether in specialized off site facilities or in traditional campus library stacks) are constantly monitoring the occupancy of shelves to determine needs for shifting collections and the projection for “filling” shelves. Some of these problems have been researched through experimental tests and resulting best practices offer standards against which to gauge a library’s success, such as an 80-85% occupancy maximum for circulating collections. Methods to gather data to assess a particular library’s success rely on measurement, using sampling and collection growth projections, and statistical analysis to gather information vital for making managing decisions regarding the library as a responsible accumulator with adequate amounts of dedicated space.

Assessment in the context of the library’s role as an accumulator of collections is of interest to a limited group of persons who manage, fund or possibly leverage the library for other institutional
purposes. Operational staffs wish to have information about the rate of growth and the corresponding amount of space needed to house collections. Library administrators similarly need to gauge the projected timeframe when new space needs to be acquired or collections need to be located elsewhere. Administrators will also want to be aware of the cost implications of space management, and some may be assessing the return on investment into aesthetics of the space by measuring the associated donor response to build new or renovate old spaces.

4.2. Space for service
In the past two decades or so, academic libraries have taken a new focus on use of physical space, trading collection shelving for more seating for readers and sometimes upgrading these public work areas with technologies and equipment. Accompanying this shift has been an increased awareness of the library as a service organization, with ambitions to not only meet, but to exceed “customer” expectations. The purpose of providing high service quality calls for a different set of questions and methods to gather data than inquiry about the physicality of placing objects in space. Perceptions become at least as important as reality and those served become key judges of success and carry opinions that sometimes are more relevant than those held by the experts designing and delivering the services. Questions include self-reporting of attitudes about the degree to which the library service meets expectations for excellence [service quality] or the reaction to a specific service transaction [satisfaction].

Customer-based assessment of service quality is a highly developed topic in marketing. The SERVQUAL is a survey-based questionnaire designed to measure Gap 5 in the Gap Model of Service Quality which defines service quality as the difference between client expectation for excellence and perception of delivered service. The instrument identifies expectations and perceptions from the responses to interval scale ratings of a set of statements about various factors repeatedly identified through empirical research in a range of service industries as being important to customers in their judgment of service quality. Research undertaken in the early 1990s tested the applicability of this methodology to libraries and its one statement relating to space was about a perception of safety. Researchers from Texas A&M working with the Association of Research Libraries undertook to design an instrument based on this construct of service quality, but more specifically focused on library settings. The resulting LibQUAL+® has become an internationally used tool to gauge customer-perceived service quality. The “library as place” emerged as an important factor from research undertaken over several years to develop this instrument. Five statements related to this factor, including characterizations as “space that inspires study and learning,” “quiet space for individual activities,” “a comfortable and inviting location,” “a getaway for study, learning or research,” and “community space for group learning and group study.” As a result of the tool’s popularity, assessment of space from the customer’s perspective has entered the library culture. Other tools are available for gathering feedback from library visitors, including the LibSat, an online questionnaire managed by Counting Opinions, which is used along with its SQUIRE Index to compute responses from customers about a range of services. The full view survey includes a specific set of questions about the library’s facilities, with request for satisfaction ratings and levels of importance for parking, hours of access, accessibility, seating and workspaces, restrooms, personal safety, security of personal belongings as well as library materials, and “the library building” in general. In addition, another group of questions focuses specifically on equipment.
Space assessment is conducted in this marketing context as a cumulative view of individualized perceptions of a facility and its aesthetics, arrangement for quiet studying or socializing, security, and overall ambiance. The perceptions sought by assessments are similar to those of other marketed environments, essentially answering questions about the customer’s satisfaction revolving around the following types of queries. “Does this place meet your expectations for what a library should look like?” “How comfortable are you in it?” “Do you like it?” And maybe even, “What does it do for you?”

The other shift toward the service purpose of the library came with the emphasis on providing equipment to support research, teaching and study. The 1990s saw the introduction of the “information commons” described as “designated spaces in libraries with additional technology that support student learning.” This model initially continues a somewhat passive nature of service, in which success is measured by use of the space, now equipped with more than collections, with seating to consult or read them, along with equipment to retrieve electronic resources and use software for schoolwork incorporating information. Assessments of information commons look to address the investment in technologies and changing the library offerings by addressing such questions as “How many students use the [new] equipment/space/services?” “What resources are accessed from the commons?” “What happens in the space?” These problems focus on assessing the space as a destination, with marketable attractiveness, but also as the venue for activities. The service responsibility of the library to provide access to information is manifested in part by the presence of information commons, including equipment and increasingly assistance from librarians and technologists.

The presence of the library on the Web introduces new assessments of “space.” Many of the same questions are posed, such as “How many come to websites and from where?” “What do they use?” “Are they satisfied?” But assessment of virtual spaces place greater emphasis than assessment of physical spaces to understand the ease of using the library. Usability testing, including observations, talk aloud protocol, problem solving, transaction log analysis, and interviews are common methodologies for gathering data about the “digital library.” Initial findings reinforce the roles of the library for storing materials accumulated and social interactions.

Gauging market penetration relies on the traditions of counting “use,” with the “more is better” benchmark. Libraries have relied on measuring surrogates to actual use, by counting the number of items borrowed, of passages through entry or exit gates, and in Web environments, the number of “hits” or downloads. Counters on equipment or software provide data gathering mechanisms and generate circulation system data and security gate or turnstile counts, for example. Methods to project who comes into the “digital library” have evolved and include for example the MINES for Libraries protocol whereby randomly generated instances of point-of-use survey questions gather information about who uses what and for what purpose from the customer’s perspective. Data gathering to assess success of information commons has augmented use [counts of how many people visit the space and sometimes, counts of use of its equipment] with the evolving reliance on satisfaction perceptions. Methodologies used include observations and sometimes transaction log analysis for counting use and describing behavior, as well as surveys and interviews [growingly with focus groups] for gauging satisfaction and perceptions of service quality.
Access to materials continues to be a major service goal of libraries. This function occasionally influences the assessment of the library as a place. For example, the Best Colleges Online review of the “25 most modern libraries in the world” primarily highlights public and national libraries with fascinating architecture. However, its entry for one academic library, Pace University Library, applauds its innovations in providing access in conjunction with its physical facilities:

This university library in New York has made it easier than ever to get access to library materials. The library was granted the Library of the Future award for an innovative media network it has implemented. An internal streaming system called MediaPatch allows the library to share various types of media across campuses quickly and easily, allowing patrons at one branch to access the resources from another at the touch of a button. This solves several copyright concerns as the information never leaves the school’s secure servers but still allows distance learners and those in the classroom to quickly and easily access information. The library also participates in a podcasting program designed to cover a variety of subjects.31

Testimony to the access function as extended to the Internet is found in reactions among participants to Google Books, becoming the world’s largest library in some people’s mind. It offers the link to the library’s facilitation role, but still grounded in the concept of a service provider and accumulator of resources. The new “transformative” role of the library, as suggested by Barbara McFadden Allen, Director of the Committee on Institutional Cooperation [CIC], is driven by access capabilities and reaches beyond the boundaries of physical space. As she notes, “we’re opening up these resources as both a common good shared among the universities, as well as a public good available more broadly.”32 Or as James Neal, University Librarian and Vice-President for Information Services at Columbia University, projects the results of the Google initiative, it “will enable the Libraries to make available more significant portions of its extraordinary archival and special collections to scholars and researchers worldwide in ways that will ultimately change the nature of scholarship.”33 Evaluating such access, specifically of Google Books, revolves around perceptions of convenience, time savings, discovery, and fairness in paying for use of copyrighted materials34 as well as product quality issues such as legibility.35 The very discovery of such assessments in an institutional repository identifies some of the questions that are seen as important for marketing use or possibly gauging value. “What can ScholarSpace [the library space on the Web] do for you?” “What can it do for the University?” The variables for assessing this virtual library space are implied by its goals, for example, to “increase impact of faculty research,” “showcase the university’s research output,” “house digitized collections.”36

4.3. Space for learning
The third function of the library, as a facilitator of learning beyond the classroom, is not universally adopted, but during the past decade has been enthusiastically implemented in numerous libraries. It has been associated with changing space needs to support principles of active or intentional learning, the utilization of information, and the requirement for collaboration, whether among students, with faculty or staff, or across different disciplines. Multiple types of spaces appear to accommodate quiet solitary reflection, noisy group study, and focused conversations between a student [or group] and a specialist in information or technology along with a teacher or tutor at times.

56
The shift from the “information commons” to the “learning commons” is another framework for changes in space design. This shift has been documented in publications, websites, and conferences. Information commons as a description of a library space has evolved into more than an assemblage of equipment and service support for using technology within the library. The concept overlaps with the construct of a “learning commons,” introduced about a decade ago. Remy characterizes “learning commons” as having the following distinction:

- its mission[is] not merely to integrate technology, reference…and services but to facilitate learning by whatever means works best. As a library service environment, the Learning Commons will enable students to develop a framework to understand and evaluate the impact of information technology on the choices they make as researchers and practitioners. As a bridge to the classroom, it will create the conditions in which students engage critically with information, see themselves as active participants in the production of knowledge, and continue that participation far beyond their university experience.

Summarizing responses to a survey in 2008 about providing learning and research initiatives and spaces from seventy-seven ARL libraries, Stuart acknowledged the similar appearance of learning commons characterized by “improved furnishings and aesthetics coupled with computer workstations arranged in an open landscape. Service points were tailored to provide information and technology assistance to undergraduates.”

Some interpret this orientation to be the future defining purpose of the academic library as a partner for learning, especially beyond the classroom. To facilitate this role, those who teach in the classroom and guide learners, also have a stake in the resulting designs of this evolving library space. Stuart also observes that “a minority of libraries reported modeling their innovative learning spaces [for undergraduates] on user-derived data, interviews, and insights,” even though by contrast “the most successful iterations of these research-oriented facilities [for graduate students and faculty] are predicated on a deep understanding of the client, informed by careful pre-programming assessment that engages the library, partners, faculty, and graduate students in discovery and insight.” He confirms the impression that,

- …assessment of built learning and research spaces is sporadic and often anecdotal. Many libraries report that the most salient statistics are found in the numbers of individuals who visit and work in these arenas. Formal mission and vision statements are sometimes lacking. Perhaps the most telling omission is the dearth of identified learning outcomes that meet faculty aspirations for students coupled with a nuanced understanding of the principal hurdles faced by students in their major disciplines.

This group of libraries illustrates similar themes in what appears in their innovative spaces, which include collaboration with campus partners, multimedia, faculty and graduate student spaces, flexible user-influenced spaces, classrooms, galleries, performances, tutoring and peer support, cafes and refreshments, and presentation practice facilities. Although faculty and graduate students are more outspoken about their expectations for physical library spaces to support their research and contemplative needs, Stuart points out that there is no consensus of what these spaces should be.
Yet assessment of the relation of space to learning is not often reported, if conducted at all. Assessments and evaluations are reported for information commons that consist of counting the number of groups studying in the library as indication of successful collaboration, a characteristic shared by both information and learning commons. An earlier SPEC survey conducted by the ARL identifies the following methodologies used to collect data on twenty-two information commons and the number of times each was selected among the respondents.

Statistics on service transactions or users 14
Informal feedback from users 12
Formal paper-based evaluation survey 8
Computer-based survey 7
Focus group [interview] 2
Point of use computer pop-up survey 1
Other [observations, staff feedback, one day paper-based survey] 3

These do not however address the impact of space on learning. These paths to gather data might identify activities occurring in the space and the satisfaction or perceptions of service quality gained from engaging with services offered in the space. These are not methods to measure what is learned, though could be used to gauge the activities surrounding learning.

In this context, assessment now becomes the interest of not only those who manage and administer space, but also those who engage with learning. Intentional learning calls for the learner to take responsibility for the learning process and achieving change in knowledge. Assessment questions become more complex with inquiry seeking an understanding beyond the library’s input [e.g. the objects to be housed in the space and the space’s appeal factors], and beyond the library’s output [e.g. the number of visitors to the space or their satisfaction with it]. Outcomes are becoming central to a variety of stakeholders who seek accountability, expecting answers to such questions as, “How does the library as a place affect student capacity to learn?” “How does it affect the creation of new knowledge, whether at novice levels of student learning, or at levels of scholarship that then is distributed and preserved?” There is very little formal assessment of learning that happens in learning commons or other library spaces. The purpose of assessments of activities within libraries has generally involved evaluations of library instructional services or usability of web sites and retrieval systems. The latter is less about the changes in the user of the web than it is in the functionality and characteristics of the site or its navigational structures to retrieve information. As Delia Neumann concludes in her examination of the literature on “learning with information,” “the field of information studies has not focused on learning as a goal of information seeking.” As she points out, various information seeking models, including those developed in educational settings, “stop short of making a direct connection between information use and learning.” It may very well be that the relationships of space to learning, especially if seeking a causal correlation, pose a set of questions that are difficult, if not impossible, to assess.

Learning is ultimately a highly individualized change in personal knowledge. It will not be understood out of context of the individual learner’s experiences, prior knowledge, motivations, and processing of data. Perhaps the best we can hope for is to assess the learning experience, both in terms of what supports activities and what learners perceive is happening in their
environment and changing in themselves. Neumann proposes an I-LEARN model to link information seeking to learning and its six categories reflect steps of the experience of learning but not the outcome of the process of learning.

Thus assessing the impact of space on learning is difficult for a number of reasons. There is no generally accepted theoretical framework that identifies the effects of environment on people. Furthermore, it is difficult to separate influences of space from other variables such as prior experience, personal distractions or stress, or styles of learning. Rapoport has evolved a number of models to clarify components of environment to analyze an activity that occurs within a space. These include four descriptive components [with illustration added to suggest application to learning]:

1. The activity proper [e.g. learning as the processing of information to create new knowledge].
2. Specific way of doing it and where it is done [e.g. reading and reflecting within a library]
3. Additional adjacent or associated activities [e.g. socializing, eating, or listening to music]
4. Symbolic aspects and meaning of the activity [e.g. behaving intellectually and joining the ranks of educated citizenry]

Architects and space designers contracted to build learning environments are associating the importance of pedagogy’s influence on space design, both programmatically and symbolically. The space is becoming the embodiment of community, as one environmental designer, notes: By space I don't just mean classroom, I mean learning community: classrooms, labs, libraries, interaction spaces, maybe residential spaces. … My frame of thinking about this is that pedagogy drives (or at least should drive) physical environment. So I am thinking about futurist pedagogy - and the physical space needs that implies. I am also thinking about my University's community service mission - and how we might intersect learning spaces with community development spaces.

To analyze the impact of space on the specific activity of learning, clarification of learning outcomes might offer a basis for identifying measurable variables. Honebein proposes seven pedagogical goals for designing constructivist learning environments. These suggest what about the activity is expected to occur in a successful learning space:

1. Provide experience with the knowledge construction process, encouraging students to take primary responsibility for determining the topics or subtopics they pursue, the methods of how to learn, and the strategies or methods for solving problems.
2. Provide experience in and appreciation for multiple perspectives so that students recognize that the real world has multiple ways to frame and solve problems.
3. Embed learning in realistic and relevant contexts to balance the removal from the classroom of the noise of real life.
4. Encourage ownership and voice in the learning process, emphasizing student centeredness.
5. Embed learning in social experience, recognizing that intellectual development is significantly influenced through social interactions.
6. Encourage the use of multiple modes of representations, creating rich experiences by expanding beyond the most common oral and written channels and adopting
additional media, such as video, automation, photographs, geospatial representation, and sound.

7. Encourage self awareness of the knowledge construction process, developing student reflexivity and their ability to explain why or how they solve a problem in a certain way and to analyze their construction of knowledge and processes.\textsuperscript{50}

Assessing the success of achieving these goals sometimes has been addressed in evaluation of information literacy instruction. However, examples of doing so within the context of library spaces have not been discovered.

A study of impact or the effects of environment on people, as Rapoport suggests, relates particular organization of space, time, meaning and communication on human behavior, well-being or mood. From such frameworks about the goals of teaching, an assessment might be designed to gather data about the extent to which learning activity goals are met. For example, metrics might include the number of group studying sessions, the amount of time spent undertaking activities in a given space, or the use of media in student presentations, each measured in relation to specifically identified areas, arrangements of furniture, or types of light, for example.

Findings might be useful in a formative evaluation for preparation of designing environments that can offer cues for behavior. They might be less reliable, however, in any predictive role of projecting successful activities within spaces, or the contribution of space to achieving learning outcomes. Measuring or even just identifying the influence of environments on learning outcomes remains a messy assessment challenge. Part of the messiness is a result of the overlapping functions housed in a library and imprecise descriptions of the targets of the library’s assessment.

A framework and research design for assessing the alignment between the design of informal learning spaces with institutional values and missions is evolving through research Scott Bennett is undertaking.\textsuperscript{51} He links questions related to effective education and learning experiences with student and faculty perceptions about their favored learning spaces. In the first phase of his project he suggests six questions that colleges or universities should answer during the design of learning spaces, some of which are built in libraries:

1. What is it about the learning that will happen in this space that compels us to build a bricks and mortar learning space, rather than rely on a virtual one?
2. How might this space be designed to encourage students to spend more time studying and working more productively?
3. For what position on the spectrum from isolated study to collaboration study should this learning space be designed?
4. How will claims to authority over knowledge be managed by the design of this space? What will this space affirm about the nature of knowledge?
5. Should this space be designed to encourage student/teaching exchanges outside of the classroom?
6. How might this space enrich education experiences?\textsuperscript{52}
Through online questionnaires, Bennett separately surveys faculty and students to identify their perceptions of what learning behaviors are important, how well their campus physical spaces support these behaviors, and where best these behaviors happen. He framed his inquiry on twelve learning behaviors identified from the National Survey of Student Engagement [NSSE]. The model of a gap analysis allows for assessment of these campus stakeholders’ assessment of space quality, echoing the service perspective to evaluate spaces. In addition, Bennett surveyed 91 college and university libraries in the United States, mostly small and medium sized institutions, which were identified as having created spaces for collaboration among academic support staff. A respectable response from 66 institutions provides information to complement the ARL study. The majority [88%] of respondents indicated that such spaces were located in library buildings. Similar features of a common space were identified as among the ARL libraries, including group study, tables for collaborative work, student academic services, workstations, peer advising, and combined technology and research help desk. Importance is ranked highest among respondents, both faculty and students, for spaces aiming to foster learning behaviors to support “conversations with students with different values,” “discussions of readings outside of class,” “conversations with students of different race,” “group study,” “discussions of readings with faculty outside of class,” and “culminating senior experiences.” Of these the behaviors most commonly perceived to be well supported were “discussions of readings with faculty outside of class,” and “culminating senior experiences.”

Bennett cites others who are thoughtfully interested in framing the design of learning spaces in conjunction with asking the right first questions. Jeanne Narum, Director of Project Kaleidoscope, observes that

Too often, planning for new spaces for undergraduate teaching in science and mathematics begins with the wrong questions. Sometimes the initial mis-step occurs when faculty say “we do not have enough space—we need more room for faculty, for students, for equipment.” Questions about size—“How many square feet per faculty member, per major, per department do you need?”—often surface in response to such demands. These are important questions, they need to be addressed. However when they shape the initial stages of planning, the process is skewed. You will not end up with the building that you need, that your students deserve.

She further concludes,

Questions about the nature of the educational experience—about quality and the nature of the learning community—are questions that must be asked first and asked persistently throughout the process, and indeed before and beyond the process of planning a facility.

Mary M. Somerville has described use of a collaborative co-design process utilized at San Jose State University and California Polytechnic State University that involved both students and faculty in the design of library spaces. The information/learning commons originally were built to advance the formal learning experiences and support teaching beyond the classroom. As a result of action research using a variety of methods such as online surveys, focus group interviews and participant observations, student engagement identified different expanded roles of these spaces. The student perspective urged the inclusion of interactive communities using Web 2.0 tools. Among resulting changes to the spaces were a provision of virtual reality production technologies to allow students to work along side faculty, librarians, instructional
designers and technology experts. A café proposal included not only access to food and drink, but also gaming opportunities for relaxation and learning. Assessments of space and learning behaviors utilized not only the growingly popular data gathering methodologies of surveys, interviews and observation, but also incorporated the practices of the pedagogies involved in the learning itself such as using three dimensional modeling, prototyping, and applications of narrative. The evolution of the learning commons at Cal Poly illustrates the “learning through doing” intention to go beyond the engagement of information and knowledge creation to embrace the full range of social dimensions involved in collaborative learning that in turn promotes critical thinking and content expertise among students and faculty. As the space design responds to the awareness of environment needed to facilitate this fully engaged learning, library space spreads beyond the physical boundaries of its facility to integrate activities within virtual spaces as well. As Beagle observes, Somerville’s “collaborative co design techniques …have perhaps not received the same level of attention as has the ethnographic approach popularized by Foster and Gibbons…although the two are not mutually exclusive.”

The library role of facilitator of learning calls for a changing role of its librarian and fellow partners. The introduction of this role has been articulated as the “blended librarian,” “embedded librarian” or “informationists.” The Welch Medical Library at Johns Hopkins University School of Medicine has articulated on its website the change of the subject clinical and public health “liaison” librarians who provide traditional services of troubleshooting access issues, building collections, answering questions, and conducting literature searches. In addition to these services, these informationists will be …much better positioned to offer on-the-spot instruction/consultation and searching, creating digital portals for you, develop Web 2.0 forums on your departmental sites, participate on systematic review teams, and collaborate on your projects as they evolve. To foster our relationships, we may ask to attend your open activities such as grand rounds and seminars, and to present our services at one of your departmental meetings. …we work with you to assess your information needs, we may suggest any or all of the following: holding set “office hours” somewhere in your research or clinical space; participating in your journal club or case/residents’ conference; participating on some of your committees. We’re excited to be part of your team!

The work of the librarian, or perhaps more descriptively renamed informationist, occurs in spaces other than the library building. The success of the library’s ability to accomplish its role of partnering with the medical faculty and students will be meaningful through the academic outcomes rather than the facility of its administration.

5. Summarizing a work in progress
The assessment of how space contributes to a library’s ability to meet its mission is a relatively new area of inquiry. The paths to conduct such inquiry are dependent on which of the evolving library roles is of interest. The traditional function of a library to accumulate materials has established methods by which space needs to house the gathered collections are quantified. Standards and best practices for shelving materials and even their readers have developed as libraries for years have been built to support this mission. The emphasis on providing service, especially to access information, has introduced a renewed interest in library assessment. Seeking input from the beneficiary of the services, the customers, has expanded the largely
quantitative approach to measuring space into use of qualitative methods. Interest in assessment of the perceptions of space became one of several factors that carry a marketing interest for gauging service quality delivery. Through both of these library functions—accumulation and service—space is an important means to achieving the library’s goals and to judge its success.

The relationship of space to the library’s expanded role as a partner in learning, a facilitator of knowledge creation, is less clear. Learning is individualized. There are no commonly held specifications for environments that are necessary for it to occur. A person might be in any of a number of places, libraries included but not necessarily, to engage in learning activities. It seems unrealistic, if not meaningless, to assess the impact of space on learning as an outcome. However, as partners in supporting the activities of learning, libraries are drawn to assess what happens in their spaces, with their facilities, and as a result of their staff’s engagement. These seem to offer a basis of assessment efforts about library space.

A summary of these relationships between the three functions of academic libraries and assessment issues is offered in Table 1. It is an initial attempt to summarize the issues raised in thinking about space assessment. It is a work in progress and invites critique and debate.
Table 1: Factors Affecting Assessing Space in Support of Different Library Roles

<table>
<thead>
<tr>
<th>LIBRARY ROLE</th>
<th>ACCUMULATION</th>
<th>SERVICE</th>
<th>FACILITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPACE NEED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To house objects, primarily physical materials [books, journals, films, archive boxes]</td>
<td>To respond to customer expectations of convenient and easy access; hours of opening, comfort, appropriate lighting, etc.</td>
<td>To offer individual workspaces, group study areas, presentation and rehearsal facilities, convenience of reserving or using spaces alone, with peers, or with assortment of expert help [information, technology, writing]</td>
</tr>
<tr>
<td>PHYSICAL SPACE EXPRESSION</td>
<td>shelving, preservation environments</td>
<td>attractive study areas, including well equipped and staffed information commons</td>
<td>diverse learning environments</td>
</tr>
<tr>
<td>VIRTUAL SPACE CONTRIBUTORS</td>
<td>repository for digital resources; server and telecommunications adequate for storage and use of owned and licensed electronic resources</td>
<td>Identification of available resources; remote access from anywhere, anytime</td>
<td>Potential use of social networking to extend learning with persons [peers and expert supporters] in different geographic proximity</td>
</tr>
<tr>
<td>ASSESSMENT</td>
<td>of operations</td>
<td>of service quality and satisfaction</td>
<td></td>
</tr>
<tr>
<td>PERSPECTIVE</td>
<td>staff managing housing</td>
<td>customer satisfaction</td>
<td>learners' perceived growth; educators' perceived support</td>
</tr>
<tr>
<td>Time frame for impact</td>
<td>long term</td>
<td>immediate</td>
<td>ongoing</td>
</tr>
<tr>
<td>PROBLEM</td>
<td>to project space needs for collection growth; understand preservation environment</td>
<td>to gauge what are expectations and what is needed to maintain high perceptions of service delivery</td>
<td>to align space with learning objectives and fostering communities of learners and knowledge partners</td>
</tr>
<tr>
<td>ASSESSMENT OBJECTIVES</td>
<td>to ensure secure preservation environment to extend the life of materials for current and future generation of users</td>
<td>to attract and maintain customers through providing high quality services</td>
<td>to offer learner means to build confidence and monitor accomplishment of information handling competencies and skills, as well as toward life long learning habits</td>
</tr>
</tbody>
</table>
Table 1: Factors Affecting Assessing Space in Support of Different Library Roles

<table>
<thead>
<tr>
<th>LIBRARY ROLE</th>
<th>ACCUMULATION</th>
<th>SERVICE</th>
<th>FACILITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAMPLE RESEARCH QUESTIONS &amp; HYPOTHESES</td>
<td>What is projected growth of collections? How many linear feet of shelving are needed? What space for staff and equipment is needed to process and service the collections?</td>
<td>What is important for ideal service? How well is service delivered? What spatial factors contribute most to improving service quality?</td>
<td>How many people simultaneously use different workspaces and areas? How much time is spent in different learning spaces [from isolated to group study]? What encourages students and faculty to engage in conversations and exploration of information in the space? What will enrich the education experience for students?</td>
</tr>
<tr>
<td>METHODS</td>
<td>Generally quantitative. Counting through sampling; statistical analysis. Experimental testing of factors such as light, water, humidity, temperature on deterioration of materials.</td>
<td>Mix of qualitative and quantitative. Interviews, surveys, mystery shopper, observation</td>
<td>Mix of qualitative and quantitative. Counting, observations, transaction analysis can address the objectives of housing and balancing different objects, which in this role involves people, furniture and equipment. Count of amount of time spent and number &amp; types of groups engaged with information within spaces. Formative evaluation for improving design. Ethnographic techniques [observation, visualization, usability, talk aloud] to understand learning behaviors. Content analysis of student portfolios.</td>
</tr>
<tr>
<td>USE OF DATA</td>
<td>can generalize and establish standards for design and evaluation</td>
<td>local application is most meaningful for diagnostic purposes</td>
<td>local application for designing space; personalized feedback to learner to encourage growth</td>
</tr>
</tbody>
</table>

(continued)
This summary does not imply any intention to prescribe a single model of conducting assessment of library space. This essay asserts that multiple paths may be taken to conduct such assessments. A good assessment plan should itself be assessed for the usability of its results. Such a “meta assessment” is suggested through John Ory’s adaptation of standards for judging an evaluation developed by educators. He suggests standards organized into four factors important to the evaluation of assessment activities: utility, feasibility, proprietary, and accuracy.66

Consideration of the assessment’s utility includes identification of the audience for its results, the credibility of its evaluator, the scope and selection of information, the protocols for interpreting results, the report [its clarity, dissemination, timeliness] and the impact of the assessment. Feasibility standards include consideration of practical procedures, political viability, and cost-effectiveness. Numerous standards guide the assessment’s propriety, intended to ensure legal, ethical and responsive conduct. These include such issues as the assessment’s formal obligations, conflict of interest, full and frank disclosure, public right to know, rights of human subjects, human interactions, balanced [complete and fair] reporting, and fiscal responsibility. Finally, consideration of the assessment’s accuracy is intended to guide delivery of adequate information about the object studied that will determine its worth or merit. Among the issues considered are the identification of the object [as a program, project, activity], context analysis, description of purpose and procedures, defensible information sources, valid and reliable measurements, systematic data control, appropriate analysis of quantitative and qualitative information, justified conclusions, and objective reporting. As with any well done applied research, these elements of design procedures and execution, should be addressed to improve the likelihood of the assessment to be responsibly completed, and worthwhile, and to ensure its results will be valid, reliable, and accurate.

6. Further research topics
Inquiry at the intersection of assessment and library space is dependent on the nature of the library role and the purpose of the research. There are a variety of research topics raised in the literature,67 that might be grouped in five broad topics:

1) Relation of space and learning:
   What is the relationship between space and cognitive development or “deep learning”? How will critical student learning outcomes be identified and realized in these learning spaces? What new staff roles provided by both the library and campus partners are required to support and deliver the agenda of these spaces?

2) Economic return on space investment:
   Are library learning spaces a factor in student decisions to remain in a college? Do these spaces influence original decisions to select a college? How much do library spaces and opportunities to name them influence donor contributions?

3) Integration with other academic functions:
   Are library learning spaces unique? Does their proximity to other library resources such as collections, staff and equipment relate to their effectiveness in supporting learning? How does the library’s web presence relate to its physical spaces in support of learning? In providing access to information services?
How will the information mission of the library be complemented and informed by these learning spaces?

4) Planning space design:
- How might more libraries benefit from user-centered assessment applied to the design and programming phases of new learning spaces?
- How will libraries create and improve learning spaces to address the specific needs of local constituents without falling into the trap of simply emulating what others have done, thus missing an opportunity for the library to engage the larger learning and research agendas of its institution?
- What are best practices and effective methods of engaging students and faculty in the design of learning environments?

5) Assessment techniques:
- What value do images or visualization mappings selected by users have in assessing importance of space elements for learning?
- How valid an indicator is quantity of use to the effectiveness of learning spaces?
- What insights can be gained for design of physical spaces from virtual learning activities [e.g. gaming, Second Life]?  

Research activities in observing the brain, ethnographic methods studying the workplace, knowledge organizations, and children behavior, student portfolio reviews, are among diverse directions where assessment of learning may stimulate topics related to libraries and learning.

7. Added implications
The exploration resulting in this essay involved a journey to unexpected topics. The topic how the assessment of space relates to libraries’ ability and practice to perform their function seemed, on the surface [and when invited to prepare this chapter], fairly straightforward. As long as traditions of defining what librarians do [as a manifestation of library function] are linked to a building, this topical question has a long tradition of counting what a library has and what physical dimensions are needed to house it, and a more recent practice of identifying customer perceptions of the quality of delivering what they do. But when addressing the topic as a problem of applied research, the purpose of an assessment calls for articulation of what the library function is. Therein lies the winding path for addressing the topic, as the function of the academic library is evolving. Space has importance in discussing the newer role of the library [embodied by its librarians and other staff intentions and activities] as a collaborative partner or a facilitator in learning and creation of new knowledge. The possibilities and activities of discovery and utilization of information have broken beyond the boundaries of physical spaces. Similarly, the nature of assessment of space to enable and foster these activities stretch beyond the limited nature of library assessments. The profession adapted research and theory developed in other fields such as marketing and business for assessment of libraries as service organizations. It now is expanding its adaptability to work with research in such diverse fields as learning sciences, architecture and interior design, environmental studies, pedagogy, instructional design, and anthropology. Exploring the relationship of space, and its design and use, to the functions of the academic library is a rich topic, but one only beginning to be addressed in the library literature and culture. This essay feels incomplete, in part because of uncertainty if it captures the state of research and practice on the topic across the various disciplines that contribute to it. It challenges the exploration to continue with discipline and
thoroughness appropriate to applied research. The focused discussion of the topic of library space in a library assessment conference promises to generate new insights to augment this introductory essay.

The newest paradigm of the library and its roles to engage in teaching and learning, while continuing its support of research calls for transformation of the librarian’s identity. As long as the profession limits its identify with what a building can do, it will remain as a service provider. The service is important, even likely to be universally valued in academia. But as a service provider, librarians are relegated to serve and thus be ultimately conceived as servants within the academy. They support the “real” work of the academic enterprise, whether that is teaching, research, or other service to society. A conception of the librarian as a partner, a collaborative facilitator, of learning to happen in a college or university, divorces the profession from its traditional roots with a building. Teachers are not “classroomarians,” scientists are not “laboratorians,” information technologists are not “computerians”, and even basketball coaches are not “courtarians”. Like these other academic professionals, librarians bring information, expertise, theoretical constructs, and practice to the advancement of learning and research. The space in which librarians have worked may have shaped their contributions to the academy – to accumulate information sources and provide services to utilize them. Assessment of library spaces for such roles has developed in fairly linear fashion. But a liberation of librarians from the buildings that house accumulated information resources and their customers may powerfully contribute to the transformation of embedding the profession into campus life. Assessment of library space may remain most relevant in terms of the library’s role to house and to serve. Assessment of library spaces, likely moving more into the metaphoric virtual “spaces,” may become more an assessment of the needs, behavior and accomplishments of its inhabitants to learn and to create new knowledge with information. The library’s added value will be evaluated not only in terms of its successful judgments and strategies to accumulate information encased in publications and Web links, and the services provided to access and effectively utilize them. The library’s value will also need to be assessed in terms of the spaces and relationships surrounding learning it fosters, in part through interactions with librarians and other partners. Library space assessment is explored in association with the Japanese concept of “ba” thought of as a shared space to build relationships and advancing both individual and collective knowledge. The concept of space in this perspective may be physical [e.g. offices], virtual [e.g. e-mails], or mental [shared experiences]. Methodologies for assessment of library spaces are becoming expansive and exciting and have potential to advance the conversations beyond the building to the very essence of the library.

References


8. Ibid., 8.

9. Ibid., 11.

10. Ibid., 10.


16. Ibid.


19. Ibid., 197.


21. Ibid.


33. Ibid.


38. Beagle, “The Emergent Information Commons.”

40. Stuart, 8.
41. Ibid.
42. Ibid.
43. Ibid, 8-9.
44. Ibid, 17.
55. Ibid., 16.
56. Ibid., 21.
57. Ibid., 23.
59. Ibid.


64. Welch Medical Library, Johns Hopkins University School of Medicine website, http://www.welch.jhu.edu/liaison/about_liaison.html.

65. Ibid.


70. Beagle, “The Emergent Information Commons.”
Abstract
This paper is a response to the assumption that libraries are under pressure to prove their worth, and that library leaders have not achieved this fully and successfully. The paper suggests that this proof of worth will be measured by what higher order beneficial effects libraries deliver, and that evaluation within currently used performance frames of reference will therefore be insufficient. The paper contends that what is sought includes an indication of transcendent contribution; that is beyond the immediate or currently recognised temporal, spatial and influential boundaries of libraries. Because what is sought is transcendent; then the right place to seek answers to value contribution will not be in immediate goals, but in values, as concepts of value depend entirely on values systems. The paper therefore suggests a new higher order framework for evaluation and performance measurement, based potentially on a values scorecard. In conclusion the paper argues that this is not merely a measurement issue but a strategic one, because the indications are that current measures based on short term goals might influence behaviour and activity in a way that reduces transcendent value rather than increases it.

Worth is used above to incorporate concepts of both the value and impact of libraries. Further discussion of terminology used in the paper is provided. The paper is focused mainly on the growing requirement for value and impact measurement in academic and research libraries, but may be seen to be relevant to other library sectors. A natural history of library performance measurement is proposed which places the requirement in context, and a reflection on the meaning of value for libraries is presented. The concept of the transcendent library, which contributes to organisational and social values, rather than simply to a narrow notion of economic value, is offered as a route to further progress.

Context and cross pressures
The aims of the academy and scholarship are transcendent, relying on a shared belief that there is an impact of higher education on individuals and society, and beyond that there is a value arising from being educated, which relates in a fundamental way to human flourishing. This has always been difficult to quantify and measure. Academic and research libraries have historically been considered to be distinctively “academic” services, implying that they also contribute to these higher and broader goals and values.

In the first Library Assessment Conference, a demand for proof of worth was voiced by a University leader,1 which when developed2 suggested that there were only two ‘bottom line’ measures of worth: impact on research (and ultimately research reputation), and impact on the financial bottom line. This reflected the two lines which have recently been developing in library assessment: the quest for impact and value measures. The term ‘worth’ is used to mean the combination of these two strands, although it will become clear later that value should be used as the more appropriate collective term (incorporating impact).
This demand for proof of worth is an additional pressure on libraries, and does not reduce or replace the need for the many other forms of assessment in use. There is however an associated danger of reductionist thinking by stakeholders and librarians in understanding and responding to this pressure, especially when paymasters attempt to reconfigure broader aims and values towards a limited range of utilitarian measures.

A recent paper based on focus groups with senior UK academic librarians commissioned by the Research Information Network is worth quoting at length3; the author was a member of one of the focus groups:

“… there is a strong feeling among senior librarians that they have failed effectively to communicate the value of their services … there is an increasing risk that much of what libraries actually do may be invisible in a virtual environment. … we believe it is important that libraries should be able to show … that they provide services with demonstrable links to success in achieving institutional goals. Return on investment is thus an increasingly important issue. Libraries need to be more proactive in seeking to understand user behaviour and workflows; and in rigorously demonstrating the value of their activities …. The focus of performance indicators up to now has tended to be on inputs and outputs … rather than addressing the much harder issues relating to impact and value. … we believe it is essential that more work is done to analyse the relationships between library activities … and learning and research outcomes … .”

This is a helpful summary of the current position, and also hints at some potential answers. In simple terms it suggests that we need to understand our users better, as this will be a route to value, and we need tools such as Return on Investment (ROI) to make the link to value and ultimately to institutional goals. As will become clear later specific assumptions are made here which define solutions perhaps before sufficient analysis has taken place.

A key element of our current context is the world changing economic crisis. A positive side effect may be that a dominant world view focused on a limited range of economic values and judgements is being challenged. An example of this thinking is Professor Michael Sandel’s 2009 Reith Lectures as commented on in a British newspaper editorial,4 based on a new appreciation of the common good:

“the credit crunch has exposed myriad mirages, demonstrating how the market can get things badly wrong when it comes to valuing things … when bureaucracies price things which should not be priced, they start trading them off against other objectives, instead of appreciating their absolute obligations.”

This suggests that a simplistic move to adding a few economic value indicators to our current assessment armamentarium may not be the right response: “cost benefit analysis can have nasty results.” What is needed first is broader reassessment of value in terms of these absolute obligations.

There has already been recognition of the cross pressures on library performance measurement arising from different value sets. To quote an example:5

“civil society has more to do with attitudes, feelings and symbols … leadership [sees] an increasing emphasis on values … value-based management is second only to change
management [in importance to leaders for continuing education]… but most organisations consist of different value sets … there is a focus on the importance of leaders as value creators.”

This suggests that there are conflicting values between different trends in public sector management, but that an understanding of values will be critical to effective future performance. Again these demands do not replace the other many existing cross pressures for data and evidence arising from earlier management trends, such as the quality movement.

The conclusion is that there is a specific new pressure for proof of value, which libraries have not yet succeeded in developing. However a response based solely on a limited economic model may not be the answer, but rather there is a need for a broader assessment of the meaning of value; and recognition that value is dependent on values sets or systems.

**Transcendence and value**

In developing the idea of value measurement it is probably important to consider both the general and more technical understandings of the term. The exploration below is developed from a paper delivered at the 2009 Northumbria conference in Florence.⁶

Value has been variously defined as worth, desirability, utility; or on the qualities that these depend; or on estimated worth; or as a financial exchange or other form of equivalent relation.⁷ More generally value as “The quality or fact of being excellent, useful or desirable” has been used as a starting point for discussions of value theory, accompanied by conclusions that precise terminology has not yet been obtained.⁸ There has been much philosophical debate about what constitutes value over more than two thousand years, so it is not possible to do full justice to that here. There are some points worth noting from that debate. First there is ambiguity over what value means. Consequently value will mean different things to different people. Value is an idea; in other words it has no independent existence, and like any idea it can be described as ‘arbitrary’; and there is not likely to be a single wholly satisfactory answer to value measurement.⁹

For libraries the challenge is to compute their own value. Because values are manifested, there will be something that we can measure arising from the way values are enacted in our libraries, and the way value is generated as a result. Additionally we would like any assessment to be comparable across institutions, but the above suggests this might be optimistic.

A philosophical debate exists around the value of an object being intrinsic or extrinsic.¹⁰ If libraries have intrinsic value then they would have value for their own sake. It seems that one of the difficulties of the current context is that an assumption of libraries delivering a timeless list of intrinsic goods is no longer broadly held to be true. This may have been the view in a past where collections were unique and libraries had monopoly on access, but it is increasingly challenged in the digital age. The concept of libraries having extrinsic value seems more appealing; we exist for the sake of something else; our value is largely instrumental value, and we can develop measures of value around our relational properties. However there would seem to be a danger of instrumental concepts of value becoming horizon limiting, hence the need to seek a more encompassing term on which to base a value framework.
A key problem with the computation of value is that it needs to be holistic. All current measurement frameworks we employ have failed to meet this need, otherwise we would not be under pressure to provide more. In the next section the history of our evaluation efforts will be considered in more detail. It is sufficient here to note that internal and immediate external measures have not delivered proof of value because they are neither holistic nor high level enough to be satisfying. The value of the whole as being more than the sum of its parts requires a different approach to analytical separation of categories or dimensions of service. The recognition of the system value of a library needs to be placed within a broader accepted value system. In this way some of the contribution to higher goods which are missing from current analyses might be captured. Some library leaders maintain a pessimistic view that libraries would not have been invented if we had started within the current digital context. This kind of thinking demonstrates exactly the lack of recognition of value which libraries add as a system, and to a misunderstanding of where we can and should add value.

A better expression of the level of value proof we are seeking lies beyond these debates, and might best be categorised as transcendent, in the sense of above or outside the immediate. This is a more appropriate view in the digital world where libraries transcend their physical space, but the strength of the term is more importantly in recognition of the full value of libraries in their contribution to more intangible wider benefits, which seems to be what stakeholders are seeking when talking about value and impact measures. However this is also relational to something more than the instrumental benefit of the immediate needs and demands of parent organisations, but to other less concrete aspects of institutional or societal intent.

This presents a different level of challenge, and justifies offering the concept of the transcendent library; one in which the value can be judged beyond the immediate, and which contributes not only to institutional objectives or immediate bottom lines alone, but also to broader value systems within the institution, and beyond, to a higher order beneficial contribution to individuals, groups and societies.

In the next section reviewing the history of library evaluation, we will see that it is possible to arrive at some similar conclusions from the way in which library performance measurement has developed and is developing.

**Library evaluation: a natural history**

The previous section might be seen to imply some criticism of our performance measurement and evaluation efforts. In reality the history of performance measurement in libraries is very rich and strong, and central to effective management. Few areas of public endeavour have such a long, thoughtful and active tradition of measurement and evaluation. Nothing in this paper should suggest that any of these efforts have not been worthwhile, or added to our understanding of our work, or to improved performance. Much of this previous work is likely to contribute to a broader holistic value story told by the library.

Nearly sixty years ago a prescient paper was written which suggested a natural history of the development of academic libraries, and by implication the way in which measurement systems might also develop, and this was taken up later. It suggested a history of three phases of focus for academic libraries: storehouse; service; education. This seems both valid and useful, and also can
be used to characterise the history of evaluation: largely internal measures based on the original value proposition of the Library as storehouse, followed by the recognition of service and service quality driven by the broader quality movement, and now in the current challenge to link our measures to the broader aims of our institutions (education in the case of academic libraries). This may simplify the picture too much; there has perhaps always been some evaluation activity across the whole spectrum. However the evidence of the balance of content of successive conferences appears supportive. What is predicted is a shift towards value related measures and evaluation, and again the evidence from this 2010 Library Assessment Conference reflects this, with proportionally many more papers in this area than hitherto.

Almost thirty years ago an influential paper distinguished between the ‘how good’ of libraries as opposed to the ‘how much good is done’ by them, laying the framework for the former as reflecting quality (equated with effectiveness) and the latter as reflecting library value (equated with benefit). This did not reflect specifically on the philosophy of value, as the paper was a response to perceived pressures to incorporate new management science into libraries, but the distinction between these two aspects thus characterised has held good. Whilst there has been great progress in measurement of quality, measurement of value has remained more intractable. Later work suggested this is because what is lacking is coherence; a sense of the whole, in our measurement systems.

Ten years ago this author produced a paper reflecting on frameworks for evaluation, and the way in which choice of measures might inhibit rather than support performance. One challenge which remains largely unanswered from that paper, is the development of measures for staff, and this would seem to be an essential element of value based measurement, given the large expenditure commitment made in this area, and the uncertainty of stakeholders around what value is added by staff. The conclusion of that paper supports this one. Our interest should remain focused on what will lead us to valuable performance as opposed merely to value measures; and what constitutes valuable performance requires some consideration prior to developing practical measurement.

**Value and impact measurement in libraries**

Thus the challenge of developing value measures has existed for some time, and the resurfacing of a demand for proof of value is not surprising. What is perhaps surprising is the lack of data and focus on financial measures in our profession. This might simply demonstrate that there are more interesting truths to discover about libraries. However these truths may be in danger of being submerged in a world which knows the price of everything and the value of nothing.

In the UK and Ireland developing and collating a coordinated response to the demand for value and impact measurement in academic libraries has been through the SCONUL Value and Impact programme (known as VAMP), and reported previously in various assessment conferences. At the outset value and impact were seen to be two distinctively different things, but accompanied by recognition that they are both about measuring the beneficial contribution of libraries.

When SCONUL began its programme, there was already a body of theory and practice from existing work in UK further and higher education, including the LIRG/SCONUL Impact Initiative on which to draw. The SCONUL impact initiative was considered to be the basis for
a model for evaluation and measurement in this field. An impact tool was subsequently commissioned, developed and mounted on the VAMP site.20 Interestingly the majority of test beds in this programme were related to information literacy, despite the initial desire to concentrate on research impact, and it would seem that the development of information literacy in individuals is a very good example of something transcendent created which continues to deliver value well beyond the boundaries of the library or parent institution. With the advent of information literacy the idea of a contribution which was both transforming from the individual’s point of view, and an addition of transcendent value from the library’s perspective has helped sharpen concepts of impact in a positive way. The optimism of clear and accepted measures and unambiguous proof of impact has perhaps not been fully realised in this case, but was at least felt to be in sight. The SCONUL work sits alongside other efforts to measure outcome, and there is insufficient space here to analyse these in depth for their underlying assumptions about value. It may be that these connections are obvious, but they remain difficult to quantify.

Turning to value measurement, what follows is a brief review of recent views on value measurement, again taken from the Northumbria 2009 presentation.21 This reveals some concerns about the danger of seeking the single magic bullet which is going to solve our value measurement problem, arising from the assumption that value measures will be framed on economic value alone.

Missingham22 reviewed a range of recent value studies. In so doing she proposed a natural history of value initiatives, suggesting three steps on the road:

- Activity based costing for output efficiency
- Perceived value based on labour saving
- Balanced scorecard pressure for ’hard’ value measurement

Note that this assumes value to be solely an economic question, although Missingham does however also make the key point that the demonstration of value needs to be linked to the organisation’s value statements. The paper’s conclusions were based on five studies, including the British Library, 3 US Public Library systems, and a national bibliographic service in New Zealand. These initiatives suggested varying benefit ratios for libraries around the 1:4-6.5 level. Some questions arise from this. Does the variation reflect real differences across communities? Larger libraries give higher returns, but what is the precise level of good? A 1:4 return might appear slight in absolute terms.

In a more recent study (a “meta-analysis”) of return on investment,23 Aabo considered this to be a new field, and driven by the financial crisis, Aabo’s work is a review of reviews, covering 17 US Public libraries and 43 other international initiatives. It finds a lack of consistency in methodology, limiting valuation comparisons, but again the scores are generally within the 1:4 range. Notably 80% of the studies are from the US, and over 80% are from public libraries. The variety of methods included cost-benefit analysis, contingent valuation, and secondary economic impact.

White24 considers ROI as an old tool with potentially new uses. This paper recognises that use of the tool in libraries has often been defensive or reactive, and echoes the previous conclusions that there is currently no professional consensus on methodology for value determination. White
suggests a more internal and instrumental use of the tool for predictive small-scale investment decision making, for post implementation value assessment, and for introspective use to evaluate unit to unit service within the library. A key comment is that these tools could also be applied in more offensive use for library intangible benefits, and this seems an important suggestion, leading towards methods which might answer the need for a more holistic picture of library value.

Thus the last selected paper is one on intangible assets, because the recognition and evaluation of the full range of value of assets is key to assessment of overall value. The valuation of intangible assets will supplement that of real assets, which have tended to be based on the concepts of the library as storehouse, or a set of clearly defined service processes, and therefore do not satisfy the criteria of transcendence or of holism. This paper equates intangible assets with knowledge assets, and these are recognised as difficult to evaluate. However there are methods for resolving this, and an approach of this type requires an intellectual capital reporting model, using similar tools to those already recognised above such as ROI and contingent valuation. A key area where this paper broadens the viewpoint towards the holistic and the transcendent is in the recognition of additional dimensions suggested for assessment:

- Human capital
- Structural capital
- Relational capital

This begins to recognise that there are valuations to be computed not simply for what the library does in instrumental terms, but that there is also a value in what has been built by the library in terms of its staff capability and capacity, in the services built around both real and virtual collections, and in the relationships which the library has with both its immediate stakeholders and broader society. Most of these aspects are not only not measured by current frameworks, they are not yet generally recognised as being objects for measurement and evaluation.

The conclusion from this is that the traditional tools for value measurement will only provide a partial answer to the demand for proof of worth. Economic value tools may be primarily instrumental; offering something new within our current frame of reference, but not providing a transcendental answer of the kind sought. Some of these tools may be better employed internally for individual valuations rather than a whole library approach, because their frame of reference fails to take into account either intangible assets or broader definitions of value.

**Value, values and valuation**

The connection between the quest for value measurement in academic libraries and their related values systems does not appear to have been made. Gorman has been a strong exponent of values in the broadest sense underpinning library work, with the apparent intent to define a timeless (and therefore transcendent) list of values. However Gorman takes the position of rejecting current existing values which conflict with those more traditional values offered. This is not sufficient to resolve the real existence of conflicting values and to deal with the current context of cross pressures for measures and proofs which library leaders face. We have to place our values measurement firmly in today’s context, resolve conflicting values debates, and provide evidence of contribution to values achievement beyond mere espousal.
It is worth returning to theories and philosophies of value, and to use these and some experience of practical work on values to make the important connection between values definition and value measurement. Firstly, some further relevant quotations:

“Whenever valuation takes place … values must enter in … in evaluation an indispensable recourse to underlying values is involved”

“values cannot be deduced from .. data or logic … they have to be chosen”

“Acts or series of acts are steered by multiple and changing clusters of values”

This suggests clearly that there is a link between values and value; that values are a matter of choice, and that values are manifested in what people do and the choices they make. This manifestation helps to make them measurable or observable, and consequently values guide conduct. Thus a values based approach to measurement within libraries may be a better basis than traditional measurement systems which tend to treat both users and staff as blind actors in a rational process of exchange, and one which might therefore need to be squeezed to be as efficient as possible. A values perspective might suggest that these often messy interactions are also a source of real value creation, generating relational capital in the trust confidence and knowledge on which new forms of service can be built.

There would seem to be a broadly accepted management science view that values and value are connected, and that both are relevant to effective organisational performance:

“Value creation is the objective of every enterprise, every worker and every leader”

Core values in the work situation provide purpose to a job on the part of individuals, and motivation is considered to be proportional to the values perceived in the job. Because a value represents a slogan for the rationalization of action, values will be key to correct actions, which then lead to value creation. Many libraries have value statements, but it may be that these have not been fully recognised or utilised to support improved performance or to help recognise how value is being added other than in superficial or general ways. An example from industry of the way this link has been recognised was the IBM experience when the company saw a need to improve ‘working together’ within to reflect the company’s new integrated solutions offerings for the external market. The solution was seen as a new set of corporate values, achieved through a “Values-Jam”; an intranet discussion amongst 320,000 employees to ‘weigh in’ on the new set of corporate values. 10,000 comments were received, mainly dissonant and discontented, but the company leadership had the confidence to let the debate run, eventually leading to resurfacing of some original company values lost in the recent transition: dedication; innovation; and trust. Note that these may be difficult to measure, but it was accepted that soft corporate values (and by implication measures of those) had to coexist alongside hard financial metrics.

At the University of York Library & Archives we used this inspiration to conduct our own values investigation using a Web 2.0 consultation tool, followed by an all staff conference to settle a new statement of values. This included recognition of conflicting values sets as characterised by Cameron et al. Whilst this started out as an investigation of staff values, we extended the question to what users valued or would value about our services. This would make the link between our internal value set and the adding or creation of value for the broader academic
community. By asking what users value, instead of what they want, need or rate as satisfactory, we received answers which were surprisingly different to what we had learnt through quality approaches. A holistic academic vision of the library as the physical expression of knowledge emerged, which revealed current weaknesses in our appreciation of what is needed to deliver the virtual equivalent of former physical libraries. This had not been identified through our satisfaction surveys, which separate content, service and physical dimensions. The student vision also revealed a new set of priorities, much more closely linked with day-to-day pressures and contextual experiences, and suggesting a need for much closer involvement of this group in design and delivery of service. Almost no response to our question suggested economic tools as being particularly relevant to proofs of value, although value for money was an issue for students in an increasingly difficult economic climate.

A number of conclusions appear to arise from the above. Value measurement must be linked to values, and in this sense it may be qualitatively different to rational instrumental measures, which require little sense of the shared beliefs inherent in values sets. Because values are chosen, value measures cannot be formed before the values set is agreed. Much of this relates to people, and therefore relevant measures are going to be closer to people than to process. The source for values measurement is therefore not in institutional goals but rather in institutional value statements. These value statements give more ready insight into how we should act, as opposed to what we should do; the latter in the past being given more focus, and also being more readily accessible and quantifiable.

Synthesis: the transcendent library
How might we use the concept of the transcendent library to assist the development of assessment of value? This seems to require a response to four questions. Firstly, what are the value propositions of the transcendent library? Secondly, how do we compute the value which libraries are adding? Thirdly, how should we present our valuations? Fourthly, why is it necessary to engage with these ideas and questions?

It is probably already clear that the answer to the question ‘What is value?’ is to a certain extent contextual. Value reflects values, and these are chosen. However the act of defining and agreeing what values sets underpin value assumptions is an important part of this process, and for academic libraries may result in resolving conflicting values within the library and beyond it amongst institutional stakeholders. It is apparent that values set statements produced by many academic libraries have a common core. However a revisit of these, engaging a wider range of inputs from other stakeholders in the process may well be worthwhile. Part of this process will be recognition of competing and shifting values. This is not a problem, but an essential part of the process of evaluation because values must be actively chosen. This work also helps to reclaim the agenda and to move away from the narrow values sets espoused by some stakeholders. The value propositions of the library should arise from these statements, providing that the approach has been holistic and collective, and has sought values which transcend immediate institutional or library goals and capture those broader common goods to which we contribute. These should include more than the obvious range of individual impact or contribution to institutional income, ranking or reputation (important though these are), but reflect more intangible value created within and beyond the institution.
It is not possible to present a full answer here to the question of how to compute value associated with value propositions, as these will differ in different contexts. It is already recognised that value has been difficult to measure and prove hitherto. Some existing data and measures will be useful in providing approaches or surrogates for value, particularly where these are focused on outcomes (as opposed to inputs or outputs), and of course most of our current activities and processes do add value and therefore will remain the objects of study. What is different is the conceptual consideration; what needs to be drawn out is the higher order or transcendent effect delivered, rather than the immediate quality of the process or service. Academic libraries have spent much of the past twenty years rightly focused on quality improvement, but it is now time to broaden our viewpoint. Quality may be where the user says it is, but value requires an opinion from a much broader range of stakeholders.

What might a values based scorecard look like and include? Such a framework will need to reflect the chosen values, and provide some specific measures or indicators associated with each. It will be important here to recognise the difference between the traditional balanced scorecard based on balancing stakeholder interests, still focused largely on input/output/satisfaction, and this higher level values scorecard. It may be that in some places value measurement already figures in such a framework. This is not to say that existing balanced scorecards can be abandoned; the focus of these on service and institutional goals and strategies remains essential.

The starting point for the development of the values scorecard will probably be the organisation’s view of itself as a creator of value and a holder of values. This may be in the form of, say, a mission statement that describes the University as a player in knowledge processes, and with a set of values statements that provide some clear directions as to how the addition of value is conceived. At the University of York, for example, values statements include the co-creation and custodianship of knowledge; assisting students to achieve their full potential; and participation and openness. In many of these it is not difficult to recognise that the Library is contributing and adding value, but our current measures are generally directed towards narrower and more instrumental concerns, or towards quality rather than the addition of value. In the work of creating value measures it will be important to eschew narrow, individual or reductionist approaches, or to merely reproduce existing process measurement in a different form. The transcendent contribution of the library and a holistic viewpoint should always be guiding principles. This means moving beyond the immediate pressures to achieve practical goals of efficiency, satisfaction, cost effectiveness, and staff capability to more transcendent goals, recognising the Library’s broadest influence on, for example, education, research, knowledge assets, corporate health, innovation, inclusivity, internationalisation, and partnerships. The concept of the library as a service has been very helpful to us over the past twenty years; it is now time to remind ourselves that we are not only an information delivery service but also a key nexus of knowledge related activity within and beyond the institution.

These new valuations will need to be based on a deeper understanding of both our own and user behaviour and context in a changing world, and recent and further work on understanding and improving student experience will be helpful here. The assessment of intangible value added will be key to developing a compelling story around our overall value proposition. The established three-fold approach to the measurement of knowledge/intangible assets is likely to be a good starting point for recognising areas for developing new measures, or in some cases revitalising
older ones. The area of structural capital demands a refocus on some of our traditional professional strengths in building and deploying knowledge systems, and to demonstrate how our new digital libraries and retrieval systems add value as both an intrinsic and extrinsic good. The area of relational capital suggests clearer recognition of not only internal institutional partnerships and collaborations which add value and support institutional values, but also the many external relationships which libraries build for long term benefit. Finally, the evaluation of our great asset in human capital remains a neglected area, and diminishing in general appreciation in the digital age. Much, if not all, of the added value we create is initially built on the skills and capabilities of staff, and yet we still lack any full coherent framework for proof of worth in this area.

The presentation of proofs is often as important as the proofs themselves. It may be that we already have enough evidence available to demonstrate value, but the impression remains that we have not done so. It seems likely that the form of this will be largely based on narrative than through numbers alone, and this is not surprising in the current context.

Finally, it is an important truth that libraries have always been an act of faith in something beyond the immediate. Great libraries have always transcended their parent organisations, not just by physical presence or through collections and service, but also in more subtle contributions to education, research and scholarship. That contribution is worth recognising and recording, and may be essential for survival in the digital age.

References


21. Town, “From Values to Value Measurement.”


30. Town, “From Values to Value Measurement.”

31. Cameron, et al.

Assessing Organizational Effectiveness: The Role of Frameworks

Joseph R. Matthews

Abstract
A brief overview of the challenges associated with demonstrating organizational effectiveness and the role of performance measures as surrogates for demonstrating effectiveness are provided. The complexity of analysis and the importance of use of performance measures provide a way to review the strengths and weakness of eight different ways to utilize performance measures. Among the topics to be addressed are: dashboards, process improvement initiatives, self-assessment award frameworks, and integrated management frameworks including the Balanced Scorecard. Finally, the article discusses which frameworks should be used for what purposes and what criteria should be used to select a framework.

Introduction
Despite a fairly lengthy history of inquiry, much confusion exists about the concept of organizational effectiveness. Conceptual questions, such as what to measure rather than how to measure effectiveness; how to define various factors and how to link these factors in the assessment process to the organization’s goals, objectives and functions still persist. Thus, the three primary challenges that must be confronted when considering organizational effectiveness are the definition, measurement, and determinants of effectiveness. Clearly the definition of effectiveness is going to be multidimensional, since a single perspective is not going to be able to capture the effectiveness of any organization.

This article focuses on providing a brief overview of the challenges associated with organizational effectiveness and the role of performance measures as surrogates for demonstrating effectiveness. Examining the complexity of analysis and the importance of use of performance measures provides a way to review the strengths and weakness of eight different ways to utilize performance measures.

Among the problems that must be confronted when assessing organizational effectiveness include: Different approaches to assess effectiveness are products of varying, arbitrary models of organizations; effectiveness is a reflection of individual values and preferences; the construct of effectiveness has never been bounded; and not all relevant effectiveness criteria have been identified. Despite these challenges, Cunningham identified seven theoretical orientations or perspectives concerning organizational effectiveness:

- **Rational goals model** – reaching goals
- **System resource models** – optimal distribution of resources within the organization
- **Managerial process models** – good organizational processes
- **Organizational development models** – good problem solving and renewal capabilities
- **Bargaining models** – processes of accommodation and adjustment between organizational elements
- **Structural models** – developing structures that support organizational elements
- **Functional models** – the social consequences of the organization’s actions.
Probably a better remembered and certainly more frequently used classification of approaches to assessing organizational effectiveness are the four major approaches articulated by Kim Cameron that include:4

- The goal model, (sometimes called the goal attainment model or the rational system model) views effectiveness in terms of achievement of specific goals and objectives. The focus is on productivity and outputs. Establishing goals maybe arbitrary or subjective. If a library does not have clearly defined goals then it will be impossible to articulate criteria of effectiveness thus rendering this model useless. The challenge in using this model is the complexity, ambiguity, diffuseness and changeability that typify educational goals.

- The internal process model (sometimes called the natural systems model) sees an organization seeking to achieve goals as well as desiring to maintain itself as a social unit. Organizational health, stability, internal processes and the attainment of goals measure effectiveness.

- The open systems model or system resource model focuses on the interdependence of the organization with its environment. The organizational survival and growth is dependent upon acquiring resources, in particular budgetary resources, from external groups.

- The multiple constituencies’ model or the participant satisfaction model sees effectiveness as the degree to which the needs of the various constituencies or stakeholders are met. Some of the stakeholders to be satisfied are not going to control needed fiscal resources (which is the system resource model). The challenge with this perspective is to reconcile the often-conflicting needs and wishes of different stakeholders, each of whom will have different criteria of effectiveness.

It may be that an organizational effectiveness model should change with the organization’s life-cycle stages.5 And Quinn and Rohrbaugh have suggested using a competing values model with three value dimensions (control-flexibility, internal-external, and means-ends).6 The significant challenges of assessing organizational effectiveness has been noted by March and Olson who have observed that organizations in higher education are “complex ‘garbage cans’ into which a striking variety of problems, solutions, and participants maybe dumped.”7

In almost every organization, performance measures are used to assess and measure organizational effectiveness. Cameron conducted a study and found nine dimensions of organizational effectiveness in institutions of higher education:8

1. Student educational satisfaction
2. Student academic development
3. Student career development
4. Student personal development
5. Faculty and administration employment satisfaction
6. Professional development and quality of the faculty
7. System openness and community interaction
8. Ability to acquire resources
Cameron’s four models have been used by others to study the applicability of these models in assessing organizational effectiveness in a library setting. One of the real challenges facing academic libraries is a lack of consensus about the goals and objectives of the library. One of the factors contributing to this failure, according to Thomas Childers and Nancy Van House, who have observed the lack of a connection between library services offered and the availability of revenues. Specifically the author’s note:

- Revenues and outputs are separated
- The lack of a common metric (the “bottom line” in corporations) is lacking
- The decision making process is bigger than the library
- The library has neither champions nor foes
- Library benefits are not widely self-evident.

Role of Performance Measures
Performance measures can play a variety of roles in an organization as shown in Figure 1. While performance measures can stand alone, they can also be combined with other management techniques to create more useful organizational tools.

Figure 1. Overview of Performance Measures in Organizations

Performance Measures
Performance measures have been used for a considerable period of time for a variety of purposes. Performance is measured through the use of performance measurement which is a metric used to quantify the efficiency or effectiveness of an activity. Almost all organizations will collect a plethora of performance measures, which are all characterized by the ease of their collection. The real value of performance measures is when an organization goes through a
planning process that identifies performance measures that are linked to organization’s vision, goals and objectives – whether they are easy to collect or not.

When a library is established it is provided with a set of resources. Those resources are organized and directed so that they become transformed and have the capability to provide a set of services. These capabilities are then utilized. And once used, the information and/or service that have been provided has the potential for a positive, beneficial impact or effect on the community or organization. Richard Orr organized a set of performance measures reflecting these activities in a library setting into his Input-Process-Output-Outcomes model.11

**Input measures** are the easiest to quantify and gather and have been used by librarians for a long time. Typically input measures are grouped into five broad categories: budget, staff, collections, facilities, and technology. Input measures are usually counts or a numeric value.

**Process measures or productivity measures** are focused on the activities that transform resources into services offered by the library and as such are internally directed. Process measures are reflected in an analysis that will quantify the cost or time to perform a specific task or activity. Process measures are ultimately about efficiency and thus answers the question “Are we doing things right?” Process measures are typically either a cost per activity or a time per activity measure. Usually a library will compare their process measures with a group of peer libraries in order to provide an assessment of how efficient the library is.

**Output measures** are used to indicate the degree to which the library and its services are being utilized. More often than not, output measures are simply counts to indicate volume of activity. Historically, use of output measures has been regarded as measures of goodness – after all, the library’s collection (physical and electronic) and its services were being used, often intensively so! Therefore, the library was doing “good.” A multiplicity of measures exists to demonstrate use of services, use of the collection (physical and electronic), use of facilities (gate count, program attendance), visits to the library’s Web site and so forth.

Broadly speaking, **outcomes** indicate the effect of this exposure on the customer. It is also important to note that outcomes can be planned (sometimes called goals) or unintended, and that the actual outcomes may be less than, equal to or greater than what was intended. Outcomes occur first in an individual and then in the larger context – the organization or community. Outcomes allow a library to assess its effectiveness and to answer a very important question, “Are we doing the right things?”

Good performance measures are:
- Balanced – include both financial and non-financial measures
- Aligned to the organization’s strategies
- Flexible – can be changed as needed
- Timely and accurate
- Simple to understand
- Focused on improvement.12
It has been suggested that good performance measures are also SMART. The measure has a **Specific** purpose, it is **Measurable**, the defined targets have to be **Achievable**, the measure has to be **Relevant** to measure (and thereby to manage) and it must be **Time phased**, which means the value or outcomes are shown for a predefined and relevant period.

**Dashboards**
Some organizations assemble a large number of performance measures and present this information in the form of a dashboard – somewhat similar to the dashboard of an automobile or airplane instrument panel. In many cases these dashboards are only made available to the senior managers in the organization. Unfortunately the plethora of measures displayed on the dashboard typically is not carefully selected nor has the organization attempted to understand whether a causal relationship exists among these performance measures.

**Key Performance Indicators**
Key performance indicators (KPI) help an organization define and evaluate how successful it is, typically in terms of making progress towards its long-term organizational goals. Key performance indicators will differ by type of organization. A university or college might consider the 5-year graduation rate as a key performance indicator while an academic library might use a collection availability rate as a key performance indicator. The idea is to select a few key performance indicators that are reflective or organizational effectiveness.

**Critical Success Factors**
Critical Success Factor (CSF) is the term for an element that is necessary for an organization or project to achieve its vision. Success factors are those activities and capabilities that define the continuing success of an organization. The concept of "success factors" was developed by Ronald Daniel and refined by Jack Rockart. The method has been applied in a number of settings: business process management, information systems, product development, new service development, institutional repositories, a library digitization project, and management of a special library.

While critical success factors might include one or more key performance indicators, the factors are more concerned about what leads to organizational success. These factors might include such topics as customer satisfaction, employee competencies and retention, service quality, innovation, information technology, and so forth. Having a clear picture of the critical success factors will do much in assisting a library in developing a clear understanding of how a library adds value.

**Process Improvement Initiatives**
W. Edwards Deming, Phillip Crosby and others who created the Total Quality Management (TQM) movement have brought greater focus to the importance of non-financial approaches and a management approach for implementing improvement activities. In particular, TQM focuses on using statistical process control methods to control and improve processes in organizations. Every process has variation and tracking the quality of a process allows for the determination if the variation exceeds the upper and lower natural process limits. Deming introduced a Plan-Do-Check-Act model as shown in Figure 2 that has been implemented in a great many organizations.
Six Sigma. The term Six Sigma was developed by a Motorola engineer named Bill Smith in the 1980s when it became clear that a method was needed to start measuring electronics manufacturing defects per million opportunities, as opposed to per thousand opportunities. Six Sigma proponents believe that if the number of defects in a process is measured, these defects can be systematically eliminated. For a company to achieve Six Sigma excellence, it cannot produce more than 3.4 defects per million opportunities (an opportunity is defined as a chance for nonconformance). Can you imagine a library achieving Six Sigma for its circulation-related processes? If you don’t consider this a realistic goal for your library, why not?

Self-Assessment Award Models
In the early 1980s, both government and industry began to push for greater productivity in business operations. The integration of both financial and non-financial approaches has guided the development of the quality award models for managers to assess their business excellence. The best-known models emerged in the late 1980s and early 1990s and were developed for the Malcolm Baldrige National Quality Awards (MBNQA) and the European Foundation for Quality Management (EFQM) Award. Other countries, Australia and Canada for example, have named their quality awards “Business Excellence Models.”

Malcolm Baldrige National Quality Award (MBNQA)
In 1987 in an attempt to stimulate quality awareness in the business sector an act was passed by the US Congress to create the MBNQA. Since that time a review process has been undertaken to determine the Baldrige Award winners based on a set of seven criteria. These criteria include; leadership, the system, strategic planning, human resource development and management, process management, business results, customer focus and satisfaction. These categories can also be defined by two key performance constructs of results and drivers – see Figure 3.
Despite the popularity of the Baldrige Award, a great deal of debate surrounds the fairness and the selection of the award winners. The award criteria are believed to provide organizations with a do-it-yourself checklist of key areas that determine quality excellence and business performance. Some organizations have lost sight of the objective of the award by focusing on the process in an attempt to win the award rather than the end – high quality products and services.

**EFQM Excellence Model – A performance self-assessment tool**
The primary purpose of the EFQM model is to provide a common language for communicating and sharing best practice among firms. Over time the EFQM Excellence Model has evolved and is now used by a wide range of business organizations throughout Europe. Figure 4 presents the EFQM model and the components, which, like the Baldrige award criteria, have been used for self-assessment purposes, as well as scoring by the awards judges.
The EFQM Excellence Model is based on nine criteria, which reflect what is considered to be leading edge management practices. These criteria are closely aligned to the performance constructs of drivers and results. The five criteria that are controllable by managers are called ‘enablers’ (or drivers) and the four criteria named ‘results’ are what an organization can achieve.

An important key difference between the Baldrige model and EFQM model is that the latter provides an understanding of performance management via a systems perspective. Essentially, the EFQM model principle is that leadership drives policy and strategy, people, partnerships and resources and processes. The results of these efforts are measured in the model by people satisfaction (employee and customer) and impact on society. The ultimate outcome is excellence in key performance results. For those firms using the model as part of the award assessment system, the scores for the ‘enablers’ are given on the basis of two factors – the degree of excellence of the approach as well as the degree of deployment of the approach. Likewise, the ‘result’ criteria are scored on the basis of – the degree of excellence of the results and the scope of the results.

One concern is that strict adherence to the principles of the model seem to be more important than modifying the model to accurately reflect the unique strategic priorities of the organization. Therefore, the EFQM model is not considered to be effective as a tool for driving changes in behaviors, which are aligned to strategy, within any particular organization. While the model is used widely by organizations throughout Europe, it is generally accepted that the EFQM model is a self-assessment tool or static auditing tool and, as such, the performance management framework is used for operational reporting instead of creating a dynamic interplay with business strategy.
Performance Measurement Frameworks
Several frameworks have been developed that provide a framework for organizing a collection of related performance measures. Among these frameworks are:

- The Performance Pyramid
- The Performance Prism
- The Service Performance Framework.

The Performance Pyramid
The Strategic Measurement Analysis and Reporting Technique (SMART) system, also known as the Performance Pyramid, was created as a management control system to define and sustain success as shown in Figure 5.26 This framework is designed for large corporations that have multiple operating units. The top level focuses on the organization’s mission, vision, and strategies. The second level defines the objectives for each operating unit while the third level provides more specific measures of operating success. The fourth level provides measures that are applicable for a department or unit within the business unit.

Figure 5. The Performance Pyramid

Source: Lynch and Cross, 1991
The Performance Prism

The Performance Prism is designed to assist managers in the process of selecting the best performance measures for their organization. The Performance Prism, which is illustrated in Figure 6, is comprised of five interrelated facets. The first facet of ‘stakeholder satisfaction’ is considered to be the most important aspect of performance measurement. This facet is meant to encourage managers to, firstly, identify who are the important stakeholders and then clarify their wants and needs. Stakeholders could include employees, suppliers, investors, intermediaries, alliance partners, regulators and the community. The second facet relates to ‘strategies’, which should be focused on delivering value to the stakeholders. Therefore, this facet addresses the question – what are the strategies required to ensure that the wants and needs of the stakeholders are satisfied?

Figure 6. The Five Facets of the Performance Prism

The third facet, ‘processes’, deals with the generic processes that underpin most organizations and that should be put in place in order to allow the firm’s strategies to be delivered. Processes include generating demand, fulfilling demand, developing new products and services and planning and managing the organization. ‘Capabilities’, which is the fourth facet of the prism, is the combination of people, practices, infrastructure and technology that enable the execution of the firm’s processes. This facet addresses the question – What are the capabilities required to operate the business processes? The final facet of ‘stakeholder contribution’ recognizes the importance of the firm’s relationship with their stakeholders. The reciprocal relationship between the firm and the stakeholder is important to organizational performance. For example, employees want safety, security and recognition and the organization wants employee contribution in the form of expertise, reliability and loyalty.

The Performance Prism is not intended to be a prescriptive measurement framework; instead managers of large organizations have used it as a tool to assist reflection. It is the inter-
relationships between the five components of the prism that best helps managers to understand the factors that drive performance. The Prism is most like the EFQM model, whereby the facets could be seen as components of a system. The Prism can therefore help managers analyze their operations for performance improvement purposes.

**The Service Performance Framework**
The Service Performance Framework which was developed for service business, profit and non-profit, includes six financial and non-financial criteria considered to be important to competitive success. Four factors *determine* competitive success (quality of service, flexibility, resource utilization, and innovation) while two factors reflect the *results* of success (competitiveness and financial performance) as shown in Figure 7.28.
Figure 7. The Service Performance Framework

<table>
<thead>
<tr>
<th>Dimensions of Performance</th>
<th>Types of Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of service</td>
<td>Reliability</td>
</tr>
<tr>
<td></td>
<td>Responsiveness</td>
</tr>
<tr>
<td></td>
<td>Aesthetics/Appearance</td>
</tr>
<tr>
<td></td>
<td>Cleanliness/Tidiness</td>
</tr>
<tr>
<td></td>
<td>Comfort</td>
</tr>
<tr>
<td></td>
<td>Friendliness</td>
</tr>
<tr>
<td></td>
<td>Communication</td>
</tr>
<tr>
<td></td>
<td>Courtesy</td>
</tr>
<tr>
<td></td>
<td>Access</td>
</tr>
<tr>
<td></td>
<td>Availability</td>
</tr>
<tr>
<td></td>
<td>Security</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Volume flexibility</td>
</tr>
<tr>
<td></td>
<td>Delivery speed flexibility</td>
</tr>
<tr>
<td></td>
<td>Specification flexibility</td>
</tr>
<tr>
<td>Resource utilization</td>
<td>Productivity</td>
</tr>
<tr>
<td></td>
<td>Efficiency</td>
</tr>
<tr>
<td>Innovation</td>
<td>Performance of the innovation process</td>
</tr>
<tr>
<td></td>
<td>Performance of individual innovations</td>
</tr>
<tr>
<td>Competitiveness</td>
<td>Relative market share and position</td>
</tr>
<tr>
<td></td>
<td>Sales growth</td>
</tr>
<tr>
<td></td>
<td>Measures of the customer base</td>
</tr>
<tr>
<td>Financial performance</td>
<td>Profitability</td>
</tr>
<tr>
<td></td>
<td>Liquidity</td>
</tr>
<tr>
<td></td>
<td>Capital structure</td>
</tr>
<tr>
<td></td>
<td>Market ratios</td>
</tr>
</tbody>
</table>
Measurement against this range of criteria as suggested in this framework may make visible the trade-offs, which can exist between two or more performance measures. Such trade-offs might include short-term versus long-term financial returns, resource utilization and service quality.

Integrated Frameworks
A more integrated and balanced approach to measurement also became popular in the early 1990s. This approach focused on providing both financial and non-financial performances measures using a framework that would encourage manager to gain a better understanding about what leads to organizational success. The objectives of such frameworks are to help organizations to define a set of measures that reflect their objectives and assess their performance appropriately.

Among the models or frameworks that have been developed include:
- The Results and Determinants Matrix
- The 3 Rs
- The Balanced Scorecard.

Results and Determinants Matrix
It has been suggested that the performance measures selected by any service-based business should be founded on the strategic intentions of the firm, which, in turn, are dependent on the competitive environment and the kind of service provided. Like many other frameworks, the Results and Determinants Matrix encourages managers to utilize both financial and non-financial measures in order to obtain richer feedback for better control of the business.

The emphasis in the Matrix is on the ‘soft’ measures such as, competitive performance, quality of service, flexibility, resource utilization and innovation, as well as the ‘hard’ measures of financial performance. These dimensions are the basis of a generic performance framework for measuring performance in service industries. Similar to the other models, the Matrix recognizes the two key dimensions of performance as the determinants (or drivers) and the results. The six generic performance dimensions are grouped into two categories of ‘results’ and ‘determinants’, as illustrated in Figure 8.
The Matrix is presented as a generic performance measurement framework with the understanding that the mix of factors within the broad categories of results and determinants may vary from firm to firm. That is, the importance of the four determinants (flexibility, resource utilization, innovation and quality of service) is contextually based. Also, in the management of a business, due to varying strategic approaches any measurement by managers against the range of performance criteria varies and may require some type of trade-off. For example, a manager may need to make a trade off between short-term and long-term competitive position.

**The 3Rs**
Yet another framework is called the Three Rs of Performance. This tool provides a balanced approach to performance management by providing a strategic and comprehensive context for decision-making as shown in Figure 9.
The Three Rs of Performance

Reach
(Who? Where?)

Resources
(How?)

Results
(What do we want? Why?)

Resources refer to both the amount of time, money and/or energy exerted as well as the type of resources used. Types of resources include capital and people, skill types and competencies required of staff, as well as the physical and spatial location of resources. It is important to understand the total resources committed to a service, program or the entire library system as well as the key characteristics of the resources. Tools such as return on investment or return on investment (ROI) and net present value (NPV) were developed in order to optimize resource utilization by maximizing the financial returns.

Reach refers to the breadth and depth of influence over which available resources are spread. Physical (spatial) reach is one dimension, as well as the type of customers the library wishes to reach. For many services and programs, reach goals relate to the amount and extent of clients served. Michael Porter, the strategy guru, and others have emphasized that an organization needs to focus on market share. As competition becomes an increasing concern, then market share becomes an important indicator of success.

Results refer to the impact on the groups of customers reached by the resources used. Desired results usually indicate the attainment of a desired outcome for the individual or the larger community being served. Often an organization will focus on service quality as a means to achieve better results. Value has been added when the results are desirable from the customer’s perspective. Customers may express themselves by indicating higher levels of satisfaction.

The Balanced Scorecard
The Balanced Scorecard, developed by Robert Kaplan and David Norton, is a comprehensive framework in which the mission and strategic directions of an organization can be interpreted via...
an array of performance measures.\textsuperscript{31} It was intended that the framework would give managers an all-inclusive view of the business yet allow them to focus on critical areas for improvement for strategic development purposes. As a result, it has been used mainly by businesses as a means of performance measurement and as a performance driver.

The Balanced Scorecard framework contains a collection of financial and non-financial measures to assist a business in implementing its specific success factors as identified in their vision. In understanding the short-term focus of financial performance, Kaplan and Norton introduced three non-financial measurement concepts – customer satisfaction, internal business process, and learning and growth, as shown in Figure 10.

Figure 10. The Balanced Scorecard Framework

According to Kaplan and Norton, previous performance measurement systems used ad hoc methods of financial and non-financial measures with a checklist type approach to measurement. In their Balanced Scorecard approach they emphasize the linkage of measurement to strategy and the cause and effect connections. The scorecards developed by each firm are based on the framework and are meant to be specific to a particular organization. The organization-specific scorecards contain a set of measures to improve performance according to the firm’s stakeholder needs and goals. In developing specific scorecards, managers start with the strategy and use each of the four perspectives to organize objectives. It was intended in the design of this framework that the measures produced should be a balance, not only of external measures and internal measures but also between the result measures (outcomes) and the driver measures (measures for future improvement).
The research on the effectiveness and limitations of the Balanced Scorecard is mixed. Important issues raised in the research literature that will be briefly discussed include strategy, comprehensiveness, and complexity.

**The strategy focus is its strength.** A commonly accepted strength of the Balanced Scorecard is the linkage of performance measures with organizational strategy. The Balanced Scorecard is very successful as a tool for driving change within an organization in a way that is aligned with strategy. In essence it is a strategy implementation tool. A management team can clarify and translate high-level strategy into business objectives by applying the Balanced Scorecard. Others stress that the scorecard’s focus on the implementation of strategy and not in determining strategy. The Balanced Scorecard has been implemented in for-profit, not-for-profit, governments at all levels, and academic institutions.

Although many other approaches to strategy implementation exist, the specific appeal of the Balanced Scorecard is its reliance on the mix of operations and financial measures, which are simply linked to the organization’s strategy. Kaplan and Norton recommend that an organization develop a Strategy Map was a way to better understand the strategies being used – see Figure 11 for a sample Strategy Map.

**Figure 11. Sample Strategy Map**

Specific and comprehensive. The Balanced Scorecard is an organizing framework, rather than a ‘constraining straightjacket’, which can be adjusted and built upon according to the needs of the organization to better understand cause and effect relationships. In considering lagging (financial) and leading (operational) indicators through its four perspectives, it addresses the concerns of using only obsolete financial accounting measures as a means of assessing and
improving business operations. In taking into account all perspectives, a focus on the issues of divergent stakeholders is required. This approach allows for each individual firm to address the goals and needs of their own particular stakeholders.

The Balanced Scorecard approach is a tool for improving the business performance of individual firms. In using the scorecard approach, the key objectives of a firm are based on a firm’s own specific strategy and not on any prescribed quality management approach.

A complex tool. The Balanced Scorecard design is necessarily complex ‘as it has to describe and reflect the organization’s own strategic goals.’ The scorecard framework is a basis for individual firms to work with to develop their own scorecards; the ease by which this can be achieved or understood by small and medium-size organizations is questionable.

Overall, the Balanced Scorecard has both strengths and weaknesses. Its key strength is its focus on the implementation of strategy. Additionally, individual firms can address the goals and needs of their own specific stakeholders when developing their scorecards. However, the approach to develop and utilize a scorecard is fairly complex. For this reason some libraries may not be able to effectively use the scorecard without outside expert advice and support.

The Library Balanced Scorecard
 Balanced Scorecards have been developed and used by academic libraries, most notably the University of Virginia, public libraries, and special libraries – particularly when the larger organization is also using a Balanced Scorecard.

The Institute of Museum and Library Services (IMLS) funded a project that explored the feasibility of adapting the Balanced Scorecard to the public library environment. A workbook developed by the project was trial tested by fifty libraries and their comments and concerns were incorporated into a final project publication “Scorecards for Results: A Guide for Developing a Library Balanced Scorecard.” One of the important outcomes of this project was a re-arranging of the perspectives in order to create a suggested Library Balanced Scorecard as shown in Figure 12.
Suggested Process. A simplified process for developing a Library Balanced Scorecard involves the following steps:

- Develop a strategy map – work to understand the causal relationships between perspectives
- Consider many and select a few key performance measures (2-3 measures per perspective)
- Identify targets and possible initiatives (projects)
- Communicate the scorecard. Meg Scharf, of the University of Central Florida Libraries, examined 250 academic library Web sites to determine if assessment-related information was available. Only 5% of libraries received an “A” while 73% got an “F.” Clearly academic libraries can and should do a better job in communicating the results of assessment efforts. It is time for more transparency.
Remember that the Balanced Scorecard is:

- A **framework** that describes and measures the strategy of the organization across the *five* perspectives: financial, learning and growth, internal process, information resources, and the customer.
- A **representation** of the library’s shared vision and **clarifying** the strategies that will be used to reach the vision.
- A **communications system** that bridges the gap between the goals established by the library and staff members who are ultimately responsible for achieving these goals.
- A **means** for making strategy operational and **monitoring** the execution of the strategies.
- A **measurement system** that reports on past operating performance and the drivers of future performance.
- A **process** for implementing and managing organizational change. A way to **link** resources with strategy.
- A **tool** to identify targets for each performance measure and the progress the library is making in achieving those targets.

**Assessing the Frameworks**
The use of a framework allows the library to begin to investigate and better understand the complexity of the relationships between drivers and results. These frameworks allow library managers to better understand how their strategies, capabilities, service offerings, and facilities affect student learning outcomes, teaching capabilities and campus research activities.

Considering the use of a framework in your library raises several important issues:
- Which frameworks should be used for what purposes?
- What criteria should be used to select a framework?
- Should you consider using multiple frameworks?

**Which Frameworks for What Purposes?** Given all of these available frameworks, what would be best in your situation? The answer, not surprisingly, is that it depends. It depends on the local circumstances and the reasons for choosing a framework. If the purpose is to provide a framework for a collection of performance measures for internal use by the library then one of the Performance Measurement Frameworks will work. If the framework were to be shared with external decision makers, then one of the Integrated Management Frameworks would be a good selection.

**What Criteria Should Be Used to Select a Framework?** Among the most important criteria that can be used to select a framework are:
- **Focus** – Is the framework going to be used to track performance measures or organizational success?
- **Perspective** – Will library management use the framework as an internal tool or is it to be used to communicate to stakeholders outside the library?
- **Fait accompli** – Has the campus already selected an integrated management framework? Some colleges and universities may have already selected a particular integrated management framework for use on their campus and thus the library should almost always use the same framework.
Resonate – Does the framework resonate with both on-campus and off-campus funding decision makers? The positive reaction by the stakeholders in your college or university to the library’s decision to use an integrated management framework should be an important selection criterion for the library. The framework must resonate with campus stakeholders.

Should You Consider Using Multiple Frameworks? The short answer is no! Selecting, developing, using and communicating a framework for the library is going to require considerable effort and adding one or more additional frameworks will only lead to confusion and complexity.

The use of an integrated management framework allows library managers to explore cause-and-effect relationships in order to be more responsive to their customers. And both the library and stakeholders must also recognize that use of a framework implies a long-term commitment – this is not a one-time project.

In addition, the library will need to identify what specific performance measures to include in the framework. None of the frameworks are prescriptive in terms of what particular measures should be used. Therefore, the library will need to “map” how existing assessment activities will be linked to the framework and what additional assessment projects may be needed in order to complete the framework.

Note also, that none of the frameworks determine what outcome measures should be used. And it is outcomes that result from using the library and its services, be they student learning outcomes, better teaching skills, improved research productivity and so forth that are becoming ever more important. This can be best accomplished if the library understands how it adds value for each type of use of the library and its services. Clearly, new measures of impact such as return on investment will need to be developed for academic libraries.

One of the real values of a framework is that it encourages the use of a few key measures from the plethora of available measures. As Herb Simon has observed “Information … consumes the attention of its recipients. Hence, a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it.”

In conclusion, the use of a framework is but a tool in the library’s efforts to accomplish two objectives: 1) better manage its resources by tacking its progress in reaching its goals, and 2) demonstrating the value of the library to its stakeholders! An integrated management framework is simply a means, and not the end, in an effort to improve communication with campus (and off-campus) stakeholders about the value of the library.

References


8. Cameron, “A Study of Organizational Effectiveness.”


29. Ibid.


32. Wongrassamee.


38. Ibid.

