

EVALUATING LIBRARY SERVICE QUALITY: USE OF LibQUAL+™

Julia C. Blixrud
Association of Research Libraries

Academic and research libraries are currently engaging in activities to try to define new metrics that better describe their service activities. Increased pressure from funding authorities and accreditation agencies, and greater than before demands from the users of services have encouraged academic and research institutions, and thus their libraries, to move towards more outcome-based assessment instead of relying merely on input, output, or resource metrics. Outcome measures show how well an organization serves its users; they demonstrate an institution's efficiency and effectiveness.

One promising approach being tested at various libraries in the United States and Canada is LibQUAL+™, an emerging standardized measure of library service quality across institutional library contexts. It is adapted from an instrument called SERVQUAL (for SERVICE QUALity), which is grounded in the "Gap Theory of Service Quality" developed by the marketing research team of A. Parasuraman, V.A. Zeithaml, and L.L. Berry.¹ This tool allows a web-based method of administration and analysis and eases the burden of administration locally, creating a scaleable and replicable protocol. It also makes readily available large normative data on user perceptions and expectations of library service quality. LibQUAL+™ was initially developed as a self-financed pilot project by interested members of the Association of Research Libraries (ARL) in collaboration with the Texas A&M University Libraries (TAMU) and subsequently received substantial funding from the U.S. Department of Education's Fund for the Improvement of Postsecondary Education (FIPSE). The three-year research and development project goals include: a) establishing a library service quality assessment program at ARL; b) developing web-based tools for assessing library service quality; c) developing mechanisms and protocols for evaluating libraries; and d) identifying best practices in providing library service.

Project Development

To address ARL member interest in defining metrics that better describe their contribution to their institutions, two ARL committees jointly developed a "New Measures Initiative" in 1999 that would develop alternatives to expenditure metrics as measures of library performance. Members of the Statistics and Measurement Committee and the Research Library Leadership and Management Committee had identified several areas in which new measures would be particularly helpful. While ARL's descriptive statistics had served useful purposes for many years, the input or expenditure based statistics provided no information about service quality. The data only recorded the resource allocations among member libraries. A focus on expenditures did not necessarily meet the new demands for accountability and evaluation and members were encouraged to come forward with suggestions for projects that would address this new measures agenda.

To begin to address the interest in service quality as one area in which new measures were needed, Texas A&M University Libraries offered their experience with the SERVQUAL instrument to the ARL community. They had a six-year history in regrounding the instrument for library purposes. The professors who had originally developed SERVQUAL were from Texas A&M University and there were other current TAMU faculty with an interest and expertise in the areas of qualitative measures necessary to ensure a reliable and valid instrument. TAMU also had a telecommunications infrastructure that could support the administration of a national web-based survey instrument.

At the October 1999 ARL meeting, institutions were asked to volunteer to participate in a pilot project that would test a regrounded SERVQUAL instrument. Thirty institutions expressed interest and a diverse group of twelve was selected. Costs for the project were borne primarily by Texas A&M University, with each of the pilot libraries underwriting \$2,000 of the costs for deliverables. An ambitious timeline was set – the institutions were selected in Fall 1999, a planning meeting with participants was held in January 2000 at the ALA Midwinter meeting, the regrounding of the instrument was completed in the winter, the surveys were conducted in April 2000, and the results were made available to the participants in July 2000 at the ALA Annual conference. The regrounding of the instrument was conducted as a qualitative process through a series of interviews with library user representatives (e.g., faculty, graduate students, undergraduates) at the participating pilot institutions. The Cognition and Information Technologies Laboratory (CITL) at Texas A&M University assisted with survey design and worked with campus liaisons to develop a customized front-end web page. In addition, hardware and software required for survey administration and data capture and analysis were acquired.

Responsibilities for the 12 pilot institutions included drawing random samples of email addresses from faculty, graduate student, and undergraduate user groups; seeking approval of the administration of the survey instrument by human subjects review boards; and preparing their own user communities for administration of the survey through public relations notices. The administration of the survey was conducted during the spring and each campus chose a time to conduct the survey that worked best with their campus calendar. In early June, all the data had been captured and was automatically downloaded into SPSS for analysis. About 5,000 responses were received from the twelve campuses.

2001 Survey Administration

The experience gained from the first year's pilot enabled ARL and TAMU to prepare a funding proposal to the U.S. Department of Education's Fund for the Improvement of Postsecondary Education (FIPSE) to extend the project to a larger and more diverse set of institutions. ARL was awarded \$498,368 by FIPSE in September 2000 for the project, "Service Effectiveness in Academic Research Libraries." The project, now named LibQUAL+™, would redefine survey questions, dimensions, and data gathering processes to develop a service that ARL and other academic libraries

could use to determine their own service effectiveness. Members of the Big 12 Plus Libraries Consortium (BTP) unanimously endorsed the project in October and most of its 30 members decided to participate in the Spring 2001 survey. Also in October, ARL hosted a symposium, "New Culture of Assessment in Academic Libraries: Measuring Service Quality," where a description of the project and project results from the Spring 2000 survey were presented. At that time a call for participation from other libraries was issued. Forty-three institutions were interested.

Representatives from the libraries participating in the spring 2001 LibQUAL+ project activities met in January 2001 in Washington, D.C, during ALA Midwinter. The meeting provided the LibQUAL+ team with an opportunity to update them on the timeline and procedures for the coming months. Logistical and technical issues were discussed and the meeting gave participants an opportunity for in-person discussion with one another and the LibQUAL+ team.¹¹ Some of the participants had been part of the 2000 survey and were able to share their local experiences. As with the first year, participant costs included a \$2,000 fee, and any internal costs to obtain the necessary email addresses, conduct promotional activities to encourage responses, and liaison staff time.

Over 20,000 individuals from 43 universities in the United States and Canada completed the Spring 2001 survey. Individual and aggregate analyses were conducted on the data and results given to the participating institutions at the summer ALA conference. Suggestions for improving the administration of the survey were made to the LibQUAL+ team and included such things as more detail on campus procedures, suggestion for changes to the instrument design, and comments on question construction.

2002 Survey Administration

A call for participation was issued for the 2002 survey in Summer 2001. In addition to individual institutional responses (including several institutions who had participated in previous years), two consortia decided to participate. Over fifty members of OhioLINK, a consortium of academic libraries from 78 Ohio universities, colleges, community colleges and the State Library of Ohio, and more than 40 members of the Association of Academic Health Sciences Libraries (AAHSL) decided to participate as distinct groups. Both consortia added questions exclusive to their community to provide an opportunity to gather data to benchmark common services.

The process for administering the survey followed the same schedule as previous years. Campus liaisons first met as a group at ALA Midwinter. At this meeting additional training was provided at a two-day workshop at which presentations by Parasuraman and members of the LibQUAL+ team focused on the gap theory behind the instrument. Participants were introduced to the qualitative theory, methods, and results that had informed the development of the LibQUAL+™ instrument. The LibQUAL+ team described the project deliverables and participants heard from institutions who had previously conducted a survey and learned what they had done with the results. In addition, a participants' manual had been prepared to provide detailed information on the

project timeline and steps to be taken by campus liaisons. The manual included information obtaining the campus human subjects review approval, defining and gathering email addresses for the sample population, the survey instrument, technical assistance, project deliverables, and dissemination. It also included sample forms, messages, and public relations communications from previous participants.

The survey instrument was opened for use in early March and closed at the end of May with responses from 78,000 individuals in 164 institutions. Individual and aggregate analyses of data for many of the institutions will be distributed at the ALA meeting in June. The OhioLINK and AAHSL analyses will be conducted separately over the summer.

Survey Instrument and Results

The SERVQUAL survey instrument was selected as the basis for development due to its long history and experience with it in academic research libraries.ⁱⁱⁱ As developed by the marketing research group of Parasuraman, Zeithaml, and Berry for the for-profit sector, the SERVQUAL instrument measures service quality across five dimensions:

- Reliability; the ability to perform the promised service dependably and accurately;
- Assurance; i.e., knowledge and courtesy of employees and their ability to convey trust and confidence;
- Empathy; i.e., the caring, individualized attention the firm provides to its customers;
- Responsiveness; i.e., willingness to help customers and provide prompt service;
- Tangibles; i.e., appearance of physical facilities, equipment, personnel, and communications materials.

The original instrument asks twenty-two questions across the five dimensions. For each question, the customer is asked for their impressions of service quality according to minimum service levels, desired service levels, and perceived performance. Gap scores are calculated for each question between the minimum and perceived expectations and the desired and perceived expectations. A zone of tolerance is the difference between the minimum and desired scores. Optimally, perceived performance should fall within that zone. Scores that fall outside the zone (particularly below) should raise warnings with managers.

Building on the SERVQUAL model, Texas A&M had found through their assessments in 1995, 1997, and 1999, that there were three library service dimensions isolated by SERVQUAL:

- tangibles; i.e., appearance of physical facilities, equipment, personnel, and communication materials;
- reliability; i.e., ability to perform the promised service dependably and accurately;

- affect of library service, which combines the more subjective aspects of library service, such as responsiveness, assurance, and empathy.^{iv}

The qualitative work to reground the instrument resulted in the addition of questions to the survey that would test five dimensions through 41-items in the Spring 2000 project:

- Affect of service
- Reliability
- Library as place
- Provision of physical collections
- Access to information

The survey was administered by sending a message to a random set of email addresses that includes an invitation to participate in the survey and links to a survey URL. Each institution's survey was custom designed so that the user sees an institutional logo. Questions asked respondents to indicate their minimum and desired levels of library service and their perceptions of their library's service on a scale of 1 to 9. [see Figure 1] As respondents answered the questions, data was collected at a server at TAMU. Data analysis was conducted using a hierarchical model of factor analysis. Results indicated there was an area to investigate surrounding issues of personal control and navigation. Additional questions were developed and the Spring 2001 survey was expanded to address five dimensions through 56 items:

- Affect of service
- Library of place
- Reliability
- Self reliance
- Access to information

The survey was conducted through a similar web-based process and results and analysis of 2001 led to the hypothesis (being tested in 2002 through a 25-item survey) that the dimensions of service that make up a users perception of service quality include:

- Service affect; i.e., responsiveness, assurance, empathy, and reliability – the human dimensions of library service
- Library as place; i.e., campus center of intellectual life, but may not be a concern if the physical facilities are adequate
- Personal control; i.e., ability to navigate both the information universe in general and the web in particular
- Information access; i.e., ubiquity of access meaning information delivered in the format, location, and time of choice and comprehensive collections.

Both the OhioLINK and AAHSL library groups will have their additional questions analyzed in the context of service quality within their peer groups.

Institutions participating in the LibQUAL+™ project receive custom radar graphs representing each major constituency group, and aggregate information [see Figure 2] to which they can compare their results. In addition, a binder with customized summaries, including statistics for all variables comparing summary institutional data to peer-group averages and medians is also provided. The reports provide the library with information on gap scores. In addition, because there were enough responses from the 2001 survey, it was possible to create score norms tables. Norm tables allow conversion of observed scores into derived scores and are used to generate both generic and specialized tables.

From project data, institutions participating in LibQUAL+™ can identify in which dimensions and for which specific services need improvement, according to their users. They can also compare their service quality with that of peer institutions in an effort to develop benchmarks and understanding of best practices.

A substantial body of literature is being developed from the LibQUAL+™ project and a bibliography is regularly updated and available at <http://www.coe.tamu.edu/%7Ebthompson/servqbib.htm>. This literature discusses such things as the quantitative and qualitative analyses for the project, administering a web-based survey, representativeness vs. responsiveness, score reliability, and response rates. Many more documents are expected as the spring 2002 and 2003 data are analyzed. Of interest particularly will be reports from institutions that have been participating in the project since its inception. They will provide examples for the use of longitudinal data.

Future Plans

The LibQUAL+™ project will continue one more year with FIPSE funding and then it is expected to become a self-supporting ARL program. As part of the 2003 survey administration, the instrument will be translated into French for two French-speaking schools in Canada. Institutions interested in participating in the 2003 survey are welcome to contact ARL. The instrument to be used in 2003 likely will be the same one used in 2002. The procedures and timeline will also follow the same patterns as previous years. Campus liaisons will be encouraged to participate actively in training sessions and will be encouraged to share their experience in using the results to benchmark their performance with peer institutions. With over 164 participating institutions in 2002, there will many opportunities for institutions to learn best practices from each other.

In addition to the funding from FIPSE, ARL and TAMU have also received funding from the National Science Foundation to adapt the LibQUAL+™ instrument for use in the Science, Math, Engineering and Technology Education Digital Library community. Goals for this 3-year grant include: a) defining the dimensions of digital library service quality from the users' perspectives; b) developing a tool for measuring user perceptions and expectations of digital library service quality across NSDL digital library contexts; and c) identifying digital library best practices that permit generalizations across operations and development platforms. This project will begin in late 2002 with its own qualitative development effort.

Further information about the LibQUAL+™ project can be found at <<http://www.libqual.org>>.

© Julia C. Blixrud, Association of Research Libraries

ⁱ A. Parasuraman, V.A. Zeithaml, and L.L. Berry, "A conceptual model of service quality and its implications for future research," *Journal of Marketing*, 49 (1985):41-50.

ⁱⁱ Members of the LibQUAL+™ team from ARL include: Duane Webster, Executive Director, Martha Kyrellidou, Senior Program Officer for Statistics and Measurement, Julia Blixrud, Director of Information Services, Dru Mogge, Program Officer for Internet Services, Jonathan Sousa, Technical Applications Development Manager for New Measures, Consuella Askew Waller, LibQUAL+ Program Specialist, Amy Hoseth, New Measures Projects Assistant; from Texas A&M University: Fred Heath, Director, Library Services, Colleen Cook, Executive Associate Dean, Texas A&M University Libraries, Bruce Thompson, Professor and Distinguished Research Scholar, Department of Educational Psychology, Yvonna Lincoln, Professor and Program Director of Higher Education, Educational Administration Department.

ⁱⁱⁱ See, for example, Vicki Coleman, Yi (Daniel) Xiao, Linda Bair, and Bill Chollett, "Toward a TQM Paradigm: Using SERVQUAL to Measure Library Service Quality," *College & Research Libraries* 58 (May 1997): 237-251; Susan Edwards and Mairead Browne, "Quality in Information Services: Do Users and Librarians Differ in Their Expectations?" *Library & Information Science Research* 17 (Spring 1995): 163-182; Danuta A. Nitecki, "An Assessment of the Applicability of SERVQUAL Dimensions as a Customer-based Criteria for Evaluating Quality of Services in an Academic Library (Ph.D. dissertation, University of Maryland, 1995).

^{iv} C. Cook, V. Coleman, and F. Heath, "SERVQUAL: A client-based approach to developing performance indicators," in *Proceedings of the 3rd Northumbria international conference on performance measurement in libraries and information services, 27-31 August 1999*, Newcastle-upon-Tyne: Information North, (2000): 211-218.