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### Another Tool in the Assessment Toolbox

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# Another Tool in the Assessment Toolbox: Integrating LibQUAL+™ into the University of Washington Libraries Assessment Program

Steve Hiller

**SUMMARY.** The University of Washington is one of five institutions that participated in the LibQUAL+™ surveys conducted each year since its pilot phase in 2000. These surveys are sponsored and administered by the Association of Research Libraries (ARL) and Texas A&M University. This paper reviews the administration, methodology and results from the LibQUAL+™ surveys in the context of an existing assessment program at the University of Washington Libraries that employs a suite of assessment tools. It also compares our LibQUAL+™ experience with the set of expectations we articulated in 1999 for participating in the LibQUAL+™ project. [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2004 by The Haworth Press, Inc. All rights reserved.]

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121

**KEYWORDS.** LibQUAL+™, academic libraries, assessment, library service quality, Web-based surveys, peer comparison

## ***INTRODUCTION***

The University of Washington Libraries (UW Libraries), located in Seattle, Washington, supports the teaching, learning, and research needs of its academic community of nearly 4,000 teaching and research faculty, 10,000 graduate and professional students, and 26,000 undergraduates. The University of Washington (UW) is one of five institutions that has participated in the LibQUAL+™ surveys since its pilot phase in spring 2000.

The UW Libraries has an extensive record of assessment activities highlighted by the use of large-scale library surveys administered on a triennial cycle since 1992. These triennial surveys are sent to all faculty members and a random sample of graduate and undergraduate students. Surveys measure user satisfaction with library services and resources and have also included questions on the reasons faculty and students use (or don't use) libraries, use and application of electronic information, importance of information resources, and their priorities for library services and resources. The triennial survey results comprise a rich lode of information about library use and needs during a period of rapid change in the information environment.<sup>1</sup> This extensive survey history with its large number of responses (more than 1,300 faculty returns in each of the last three surveys) also provides excellent grounding for comparing the LibQUAL+™ surveys with its much smaller sample size and response rate. Other assessment measures used by the UW Libraries include in-library use surveys, focus groups, usability studies and guided observation. A more complete description of the program, including survey instruments, results, and analysis can be found at: <http://www.lib.washington.edu/assessment/>.

### ***UW Libraries Assessment Efforts Have Found Among Our Users***

- High satisfaction with the Libraries, its services, and collections
- Substantial changes in library use patterns since 1992
- A marked preference for desktop access to information resources
- Differences in library use patterns, priorities and needs between academic subject areas

- Undergraduates use libraries very differently than faculty
- Library as place remains important to undergraduates *while declining for other groups*
- Information technology and online information resources enhance research and teaching
- UW Libraries considered the most important information resource for faculty and students

### ***LibQUAL+™ at the University of Washington***

Given an existing, reasonably robust assessment program, why did the University of Washington Libraries decide to participate in the LibQUAL+™ effort? Initially the reasons were to:

- Gain experience with a Web-based survey tool
- Work with a less costly survey method utilizing a standardized survey instrument
- Identify service gaps
- Track user satisfaction and needs during non-triennial survey years
- Complement existing assessment program and activities
- Compare results with peer institutions

An earlier paper<sup>2</sup> reviewed the LibQUAL+™ 2000 process and results at the University of Washington and found that while the response rates were substantially lower than the UW triennial surveys, they were still representative of the population, and results meshed well with triennial survey findings. The LibQUAL+™ 2000 survey results identified many of the priorities, issues and concerns that came up in the triennial survey conducted in 1998 and LibQUAL+™ was run at a fraction of the cost.

### ***LibQUAL+™ 2001***

The 2001 LibQUAL+™ survey was administered in February so as to avoid a conflict with the UW triennial survey scheduled for Spring 2001. The University of Washington was the first institution site to launch the 2001 LibQUAL+™ survey. A flawed faculty sample, changes in survey methodology and a major earthquake in Seattle one day after the initial survey launch all had major impacts on survey administration

and in obtaining useful results. The faculty survey was dropped (a new sample was not drawn and no reminder notices were sent, surveys returned by faculty were not counted) but the survey continued for graduate and undergraduate students.

### ***2001 Survey Design and Methodology***

There were several changes made in survey design and methodology that affected results, the most important being the use of a one-column rating (perceived level only) that was offered to about half the survey participants. Another change for UW survey takers was the absence of a “not applicable” category, making respondents provide ratings for each question (a “not applicable” button was provided on surveys to institutions that followed). The use of a one-column response appeared to have a noticeable impact on survey results. While the overall student response rate was similar to 2000 (Table 1), only 47 graduate students (32%) and 29 undergraduates (23%) completed the three-column survey and thus the groups that provided minimum and desired expectations were of limited size. These low numbers by themselves complicated statistical analysis and comparison of the 2001 data with results from 2000 and those of other institutions. In addition, the perceived scores of those completing the three-column survey were generally higher, sometimes substantially higher, than those responding to the single column one. Changes in the composition of the graduate student respondents also limited the ability to use results (Table 2).

### ***LibQUAL+™ 2002***

Administration of the LibQUAL+™ survey in 2002 proceeded smoothly, especially in comparison with 2001. The number of core survey items was reduced to 25 plus three overall satisfaction items and two frequency of use items. There were few technical or computer compatibility problems reported and just a handful of comments from respondents about methodology and survey design. (Fortunately, the Seattle area was not visited by any natural disasters during the survey period.) The central support provided by the LibQUAL+™ technical team was excellent and the ability to track responses was helpful in targeting reminder notices.

TABLE 1. Response Rates to LibQUAL+™ and UW Triennial Surveys

Group	2002 LibQUAL+™	2001 LibQUAL+™	2000 LibQUAL+™	2001 UW Triennial	1998 UW Triennial
Faculty	22.2%		21.6%	36.2%	40.0%
Graduate Students	21.3%	24.5%	22.7%	39.8%	45.7%
Undergraduates	15.4%	14.1%	16.1%	24.9%	39.4%

TABLE 2. Graduate/Professional Student Population and Survey Respondents by Academic Area

Academic Area	2002 LibQUAL+™ n = 128	2001 LibQUAL+™ n = 147	2000 LibQUAL+™ n = 136	2001 UW Graduate Pop n = 9158	2001 Triennial UW Survey n = 597
Health Sciences	24.2%	15.6%	22.1%	28.6%	26.3%
Sciences/Engineering	32.8%	56.5%	28.2%	27.0%*	27.8%*
Humanities/Arts/Social Sciences	26.6%	19.0%	45.0%	37.4%*	40.0%*
Other	16.4%	8.8%	4.6%	7.2%	5.9%

\*Psychology moved from Science to Humanities/Arts/Social Sciences to provide comparison with LibQUAL+™ results.

Response rates were similar to previous LibQUAL+™ surveys and the breakdown by academic area for faculty and graduate students continued to show graduate students in the humanities/arts and social sciences underrepresented and faculty in the same area over-represented (Table 3). The differences in graduate student academic area affiliation may represent a mapping problem as a number of large graduate student programs such as public affairs, information, and social work may not identify with social sciences or health sciences and, instead, choose, “other.” Undergraduate representation by class year was similar to the 2000 survey (Table 4).

### LESSONS LEARNED

As the LibQUAL+™ project nears the end of its pilot phase, this is an appropriate time to review and compare our expectations for our LibQUAL+™ participation with our experiences and results.

TABLE 3. Faculty Population and Survey Respondents by Year

Academic Area	2002 LibQUAL+™ N = 133	2000 LibQUAL+™ N = 127	2001 Faculty Population N = 3720	2001 Triennial UW Survey N = 1345
Health Sciences	40.6%	43.0%	48.6%	47.7%
Sciences/Engineering	23.3%	25.8%	24.3%*	24.5%*
Humanities/Arts/Social Sciences	32.3%	31.2%	23.4%*	24.5%*
Other	3.8%	4.6%	3.7%	3.3%

\*Psychology moved from Sciences to Humanities/Arts/Social Sciences to provide comparison with LibQUAL+™ results

TABLE 4. Undergraduate Student Population and Survey Respondents by Year

Class	2002 LibQUAL+™ n = 139	2001 LibQUAL+™ n = 127	2000 LibQUAL+™ n = 145	2002 UW Undergrad Pop. n = 23858	2002 Triennial UW Survey n = 497
Freshman	23.0%	14.2%	22.6%	16.7%	14.5%
Sophomore	13.7%	13.4%	13.9%	19.0%	12.1%
Junior	32.4%	28.3%	27.7%	26.2%	29.8%
Senior and 5th year	30.9%	44.1%	35.8%	37.0%	43.0%
Other				1.0%	0.6%

### *Gain Experience with a Web-Based Survey Tool*

The University of Washington Libraries had not used Web-based survey tools beyond course evaluations or other targeted efforts. We were specifically interested in the ability to pull a large sample of faculty and students that included current e-mail addresses, the community's receipt and response to an e-mail invitation to take a Web-based survey, and the technical issues associated with a Web-based survey accessed through multiple mediums.

Another campus agency drew our faculty and student samples and they had no difficulty in coming up with the sample size numbers and e-mail addresses. The number of incorrect or invalid e-mail addresses remained relatively low (ranging from less than 1% of faculty up to 3% for undergraduate students) and comparable to the resultant number of invalid mail addresses in our triennial surveys. Although an Autumn 2002 Educational Technology survey found that 40% of UW students used a non-university e-mail account as their primary e-mail service,<sup>3</sup>

the percentage of undergraduates who opened the 2002 LibQUAL+™ survey was only slightly lower than for graduate students and faculty. However, the percentage of undergraduates who completed the survey after it was opened was only 70%, compared to 80% for graduate students and 85% for faculty.

The response rate for all three years has been remarkably consistent and we have used the same approach each year: an e-mail invitation and two follow-up reminder messages. The response rate is substantially lower than what is received with our triennial surveys, although not as low if the same criteria were applied to determine a valid survey. If we applied criteria similar to what we use to define a valid returned survey for the UW triennial surveys to the LibQUAL+™ surveys, the nominal response rate for LibQUAL+™ 2002 would increase as follows: undergraduates from 15% to 18%; graduate students from 21% to 23%; faculty from 22% to 27%. There is some evidence that response rates for Web-based surveys continue to be lower than for print surveys. For example, two recent surveys conducted by the UW Office of Educational Assessment on educational technology revealed that participants were more likely to complete paper surveys than the online version. For a 2002 student survey, 59% of the completed surveys were paper, and 41% were done online. Among the completed surveys returned by faculty in 2001, 68% were paper and only 32% were online.<sup>4</sup>

Technical problems with users opening and completing the LibQUAL+™ survey have decreased substantially from the first year (2000). Known problems from the user end (such as using Internet Explorer with a Mac) were addressed and backend support grew more robust. User annoyance at having to complete a small number of questions on each screen before proceeding were also addressed by format changes that enabled them to view more of the survey at a given time.

### ***Work with a Less Costly Survey Tool and Use a Standardized Survey Instrument***

The 1998 UW Libraries triennial survey had direct costs of \$19,000 (30% printing, 30% mailing, 30% data entry, 10% other). Increased mailing and printing costs for the 2001 triennial survey pushed the direct costs closer to \$22,000. The \$2,000 participation fee for LibQUAL+™ saves 90% of the direct costs and as a “turnkey” delivered Web-based survey, LibQUAL+™ virtually eliminates the staff time associated with survey design and development. While an eventual move to a Web-based triennial

nial survey will eliminate the printing, mailing and direct data entry costs, there will be other costs associated with design and development for a Web-based environment including systems support. However, the consistently lower response rate for LibQUAL+™ and other local Web-based surveys presents us with an interesting challenge for our 2004 triennial survey. We had planned to do this as a Web-only survey, but may use a hybrid method to maximize potential returns.

The triennial surveys are developed, designed, tested and distributed by UW Libraries staff with some assistance from other campus units. Surveys are adapted to the local environment and many questions deal with issues of concern to the Libraries and/or the campus community. After the initial survey in 1992, the survey design and development process now takes about 3 months and averages about 500 hours of staff time. LibQUAL+™ offered the opportunity to use a well-proven methodology (ServQUAL) with the survey design and development done externally and grounded in qualitative theory.

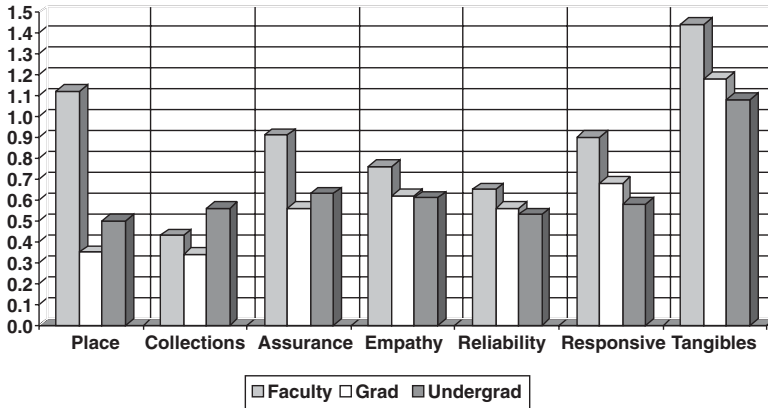
### *Identify Service Gaps*

The LibQUAL+™ methodology exerts a powerful, seductive appeal in its ability to measure the differences or “gaps” between a user or customer’s service expectations and actual perceived level of service. In our other surveys we could learn about perceived levels of importance, use, and satisfaction but did not have a way to frame this level against user expectations and needs.

The 2000 LibQUAL+™ survey showed few negative service adequacy gaps (perceived level of service below minimum expectations) among UW faculty and students. The largest negative gaps occurred with the faculty response to the question “full-text delivered electronically” and graduate student and faculty ratings of “complete runs of journal titles.” There were no negative gaps among undergraduates.

While there were few negative gaps in 2000, there were a number of large positive service adequacy gaps. On nearly half the questions, the mean faculty score for perceived level of service was at least .9 higher than their minimum level. Students were more measured but generally had healthy positive gaps in all dimensions (Figure 1). Further analysis of the data found that gap size did not necessarily correlate with perceived levels of service, where outside of library as place, the difference in perceived levels was relatively small. In the library as place dimen-

FIGURE 1. UW LibQUAL+™ 2000 Service Adequacy Gaps by Dimension and Group



sion, the faculty positive gap was substantially larger than for students, although undergraduates had a much higher perceived score (Figure 2).

It is interesting to note that in our LibQUAL+™ 2000 survey (and in the ensuing surveys at other institutions), faculty and student results showed far larger positive service adequacy gaps for the service affect dimension than did library staff, where there were often negative gaps. Seeing our users identify librarians and library staff as strengths, and one that they valued, was important not only for our staff to know, but also for our University administration to know.

The 2002 LibQUAL+™ survey data results showed only a few small negative gaps among faculty and graduate students and none among undergraduates. While gaps can be presented in tabular data, it is easier to grasp the perceived level of service in relationship to both the minimum and desired, in addition to relativity to the other groups by viewing results in a chart showing the “zone of tolerance”—the area between minimum and desired levels. For example, while the undergraduate perceived score on the access to information dimension was similar to the other groups, undergraduate expectations were much lower, leading to a larger positive service adequacy gap (Figure 3).

There were few surprises in the questions that resulted in negative service adequacy gaps, as we knew from our triennial surveys and other qualitative data that faculty and graduate students placed a premium on remote access to information with journals being the most important in-

FIGURE 2. UW LibQUAL+™ 2000 Perceived Service Levels by Dimension and Group

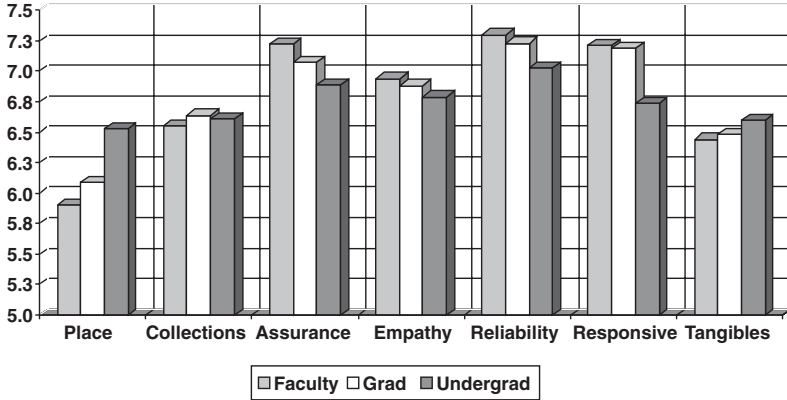
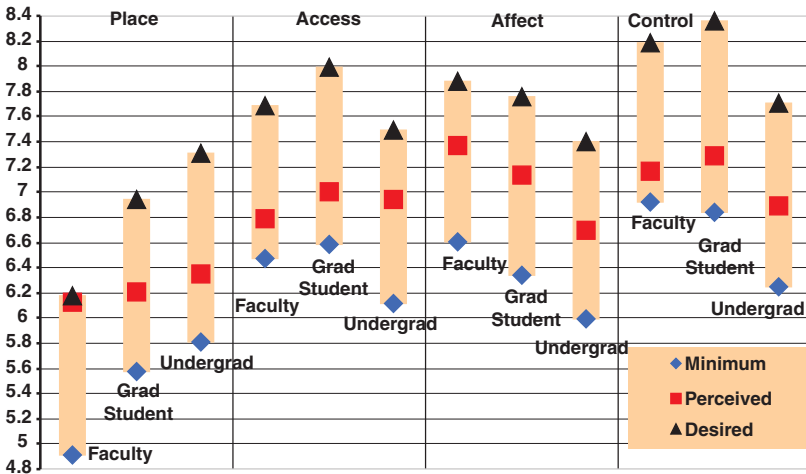


FIGURE 3. LibQUAL+™ 2002–UW Scores by Dimension and Group



formation resource. While we initially thought that finding negative service gaps would prove valuable in identifying service deficiencies, generally that was not the case. Instead it was the large positive service gaps, especially the affective ones, that provided a dimension of user input that we had not measured before. These questions were not asked on

our own surveys, and we had not looked at this area in any systematic manner before.

### ***Track User Satisfaction and Needs During Non-Triennial Survey Years***

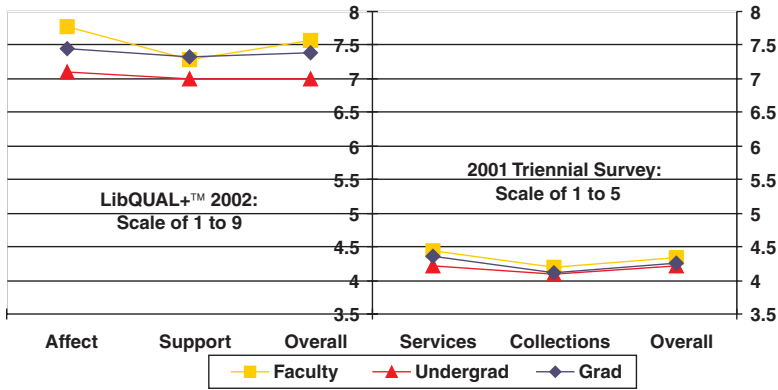
The UW Libraries triennial surveys provide user satisfaction scores in three categories using a five-point Likert scale: satisfaction with services; satisfaction with collections; and overall satisfaction. We are also able to track user needs, satisfaction with hours and more specific services such as library instruction and access to computers in the library. Our 2001 triennial survey showed that user satisfaction was highest for faculty (although unchanged from 1998), with student satisfaction slightly lower although showing a measurable increase from 1998. The LibQUAL+™ survey ranks general satisfaction on a nine-point scale in three categories: overall; library support for learning, research and teaching needs; and affective treatment. While the more specific satisfaction questions differ and respondents will react differently to a nine-point scale compared to a five-point scale, there is reasonable congruity between satisfaction scores on both surveys. The patterns of higher faculty satisfaction and lower undergraduate satisfaction hold true in both surveys (Figure 4). At the aggregate level, LibQUAL+™ can provide inexpensive tracking of user satisfaction.

### ***Complement Existing Assessment Program***

The University of Washington Libraries assessment program has been underway for more than a decade and uses a variety of methods and techniques to provide a three dimensional view of our user community, their library and information use patterns, needs, priorities and satisfaction. LibQUAL+™ has emerged as an inexpensive complement to our assessment program. Not only is it cost-effective, LibQUAL+™ asks service quality questions in a way that enables us to gauge the perceived importance of the service as well as our performance. Additionally, we can also compare our responses with those of other institutions.

Our local assessment efforts show a continued shift towards remote use of library resources as the availability of electronic resources and services grow. While the frequency of visits to the physical library has decreased, especially for faculty and graduate students, the library as a place for undergraduate students to do work remains important.<sup>5</sup>

FIGURE 4. UW Satisfaction Scores: 2002 LibQUAL+™ and 2001 Triennial Survey



The large number of responses to our triennial survey, especially among faculty, enables us to perform analysis below the aggregate level such as by broad academic area, college or school. We have found substantial differences in some areas such as library use patterns and the value of print and electronic resources, and few differences in others such as satisfaction or library importance.<sup>6</sup> Since approximately 75% of our questions are the same for faculty and students, we can compare results between groups as well. Other surveys, such as those dealing with in-library use, provide additional information on why users visit the physical library and what they do while there.

We use such qualitative methods as focus groups and interviews to follow-up on survey results to better define issues from the user perspective. This information can be quite powerful as it comes directly from the user, but requires a different type of analysis that can be quite time-consuming.

A comparison of results from our last triennial survey and the LibQUAL+™ 2002 survey illustrates how LibQUAL+™ complements our local efforts. Our survey results showed a continued shift to remote use with faculty and students identifying desktop access to electronic resources as their overwhelming top priority. We also saw substantial increases in the importance of electronic journals to their work. Among a list of library services, student satisfaction with the Libraries Website was the highest and it was among the most used of any service. The LibQUAL+™ 2002 survey results for UW clearly identified the per-

sonal control dimension as critical for faculty and students with the highest minimum and desired expectation levels of any dimension for all groups (Figure 3). When we look at the individual questions with the highest desired level of service, they also tend to fall into the personal control dimension (Table 5).

The importance of the personal control dimension to all groups was a powerful message to library staff that providing remote access to resources and services without library mediation or intervention was the top priority of our faculty and students. A number of library activities ranging from Website usability to database interface reviews were initiated to improve our services in these areas.

Service affect results helped supply information on the elusive qualitative and human aspect of library service delivery. The UW Libraries had developed a comprehensive training and orientation program for new staff and student workers that emphasized service quality and user-centeredness. LibQUAL+™ gave us the opportunity to measure the outcomes of our service interactions.

While LibQUAL+™ complements our other survey efforts, it cannot replace our ability to locally tailor a survey, both in design and content, to our local environment, as well as draw a large response needed to perform sub-aggregate analysis by academic subject area. Our triennial surveys have a sufficiently large number of responses to allow us to an-

TABLE 5. LibQUAL+™ 2002—Five Questions with the Highest Desirable Rating by Group

Dimension	2002 Top 5 desirable by group with service adequacy gaps	UW Faculty		UW Grad		UW Undergrad	
		Des	Gap	Des	Gap	Des	Gap
Access	Convenient business hours	7.84		<b>8.34</b>	<b>-.19</b>	<b>8.21</b>	<b>.78</b>
Affect	Knowledgeable employees	<b>8.28</b>	<b>.44</b>	8.22		7.70	
Place	Comfortable and inviting location	6.94		7.37		<b>7.75</b>	<b>.58</b>
Control	Electronic resources available remotely	<b>8.44</b>	<b>-.08</b>	<b>8.55</b>	<b>.18</b>	<b>7.89</b>	<b>.45</b>
Control	Modern equipment	7.93		8.22		<b>7.89</b>	<b>.79</b>
Control	Library Website to locate info on my own	<b>8.30</b>	<b>.28</b>	<b>8.49</b>	<b>.52</b>	7.57	
Control	Easy-to-use access tools	<b>8.23</b>	<b>.19</b>	<b>8.36</b>	<b>.54</b>	7.56	
Control	Info easily accessible for independent use	<b>8.30</b>	<b>.41</b>	<b>8.30</b>	<b>.60</b>	7.59	
Control	Convenient access to library collections	7.98		8.23		<b>7.77</b>	<b>.56</b>

alyze results by academic subject area among faculty and graduate students. As a result, we can discern appreciable differences between subject areas, especially with faculty, and can plan our services and programs to take account of those differences.

### ***Compare Results with Peer Institutions***

Although the UW Libraries had an extensive record of survey data concerning the library and information needs and priorities of our users, their perception of library importance and satisfaction, we didn't have a sense of how this compared with other institutions. We hoped that using a standardized survey instrument along with other universities—especially peer ones—would allow us to better assess service quality in a context broader than just the University of Washington. This would enable us to identify and collaborate with peer institutions with high user satisfaction levels and large positive gap scores to establish a set of best practices.

Texas A&M and ARL produced a results notebook for the 2000 pilot survey that provided mean scores on the survey items by group at the aggregate level and for the specific library. Included were radar charts plotting mean scores by group for each institution, but not the data itself. Thus, it was difficult to compare a mean score at one institution with that of another either by dimension or question. Although we could compare University of Washington scores by group with that of the aggregate for the 12 institutions, the aggregate also included our own scores. Also, due to the relatively low number of institutions participating and the wide variation in response rates and numbers from each site, those numbers could be further skewed. However, there was sufficient information at the individual and aggregate level to note that our negative gaps on the “full text delivered electronically” and “complete journal runs” questions were lower than at most individual institutions and the aggregate means.

For 2001 survey results, a similar notebook was delivered to each participating institution. However, the LibQUAL+™ support team also provided Web accessible summary level data (usually mean scores) for each institution through a management center. Data was in HTML format and could be either printed or cut and pasted into local spreadsheets. Local institutional data could be compared to data from any one or set of institutions.

Distribution of 2002 survey results was handled differently due to the much larger number and broader range of participating institutions. In

addition to the printed notebooks, electronic versions were made available to participants through a Web-based management center. A short set of institutional means was also provided in spreadsheet format. Score and gap norms<sup>7</sup> were also made available for comparisons. While it was useful to have the local institutional notebooks available, the PDF format also required more manual effort to put the data into spreadsheets for comparative analysis.

A comparison of UW results with those of other ARL libraries shows that mean perceived scores and gap scores were higher for UW faculty (Figure 5) and graduate students, while undergraduates generally had lower perceived scores and somewhat larger positive gap scores.

By manually entering LibQUAL+™ 2002 mean scores from selected universities, we can also analyze where UW fits among “peer” institutions, which we defined as those 18 libraries ranking among the top 40 in the ARL Index. As the UW Libraries ranks fourth in this “peer” group (12th in the ARL Index), we hoped to be in the upper quartile in satisfaction and positive gap scores. The UW ranks comparatively high in overall faculty and graduate student satisfaction (Figure 6). While undergraduate satisfaction and perceived service level scores are generally mid-range, service adequacy and superiority gaps rank nearer the top as can be seen for the personal control dimension (Figure 7). In general, we found the LibQUAL+™ data supported a favorable comparison of our service quality with our peer libraries.

FIGURE 5. LibQUAL+™ 2002–Faculty Scores by Dimension

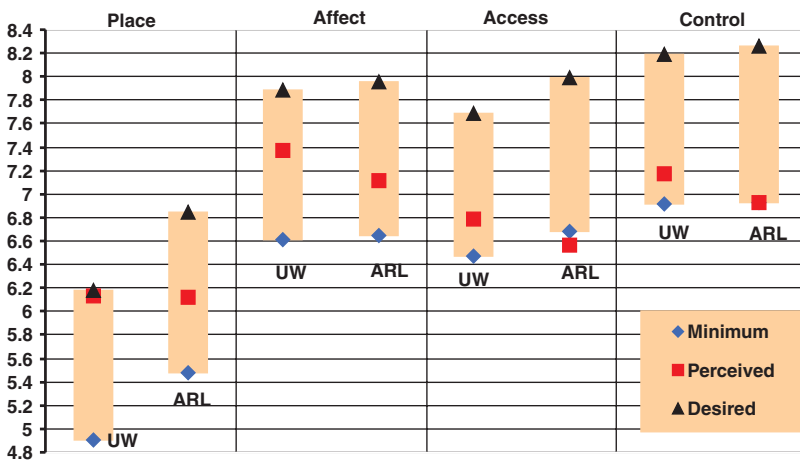


FIGURE 6. LibQUAL+™ 2000 Overall Faculty and Grad Student Satisfaction by ARL Ranking

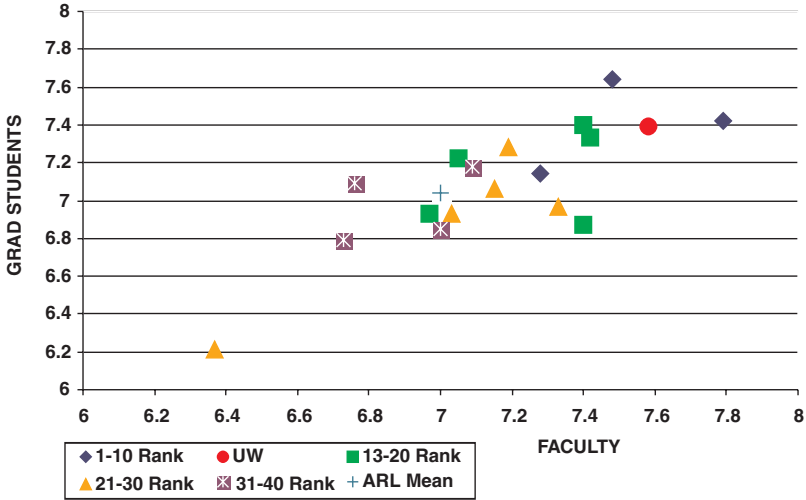
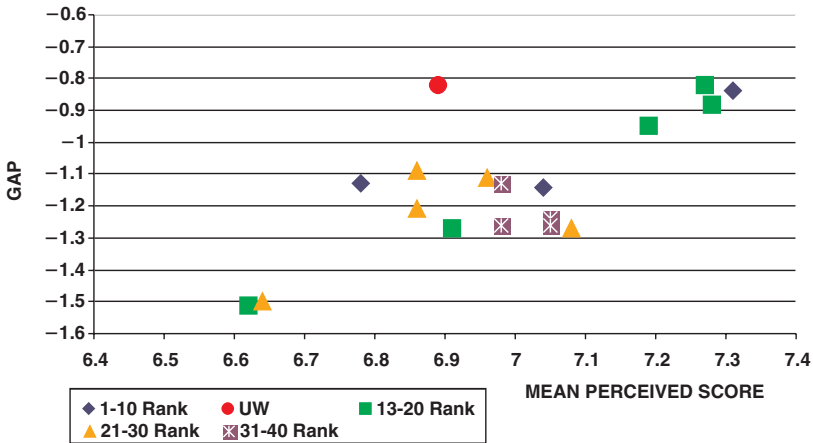


FIGURE 7. LibQUAL+™ 2002 Undergraduate Service Superiority Gap for Personal Control Dimension by ARL Ranking



## CONCLUSION

In general, our experience with LibQUAL+™ has been positive and instructive. The LibQUAL+™ project has demonstrated that a Web-based library survey can run efficiently and inexpensively, deliver results that are congruent with those achieved in large-scale more expensive surveys, and can provide comparative data on service quality over a range of institutions. While LibQUAL+™ will not substitute for local assessment efforts, it is a viable complementary tool that can be used to track user satisfaction and needs in a cost-effective manner. The ability of LibQUAL+™ to identify from the user perspective not only service deficiencies, but also service strengths, can be of immense value to libraries. Libraries need to understand what they do well as much as to discover what needs improvement.

## NOTES

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