



Improving Library Service Quality to Graduate Students: LibQual+™ Survey Results in a Practical Setting

Maria Anna Jankowska, Karen Hertel,
and Nancy J. Young

abstract: The LibQUAL+™ survey was conducted to determine user satisfaction and expectations concerning library service quality. The results of the “22 items and a box” constituted a rich source of information for the University of Idaho (UI) Library’s strategic planning process. Focusing on graduate students, this study used three methodologies to analyze survey results. The first method, internal benchmarking, compared UI graduate students to UI faculty, staff, and undergraduates. Secondly, external benchmarking using score norms evaluated UI graduate student results against their peers from other non-ARL libraries participating in the 2004 LibQUAL+™ survey. Lastly, categorizing and carefully considering survey comments enriched the quantitative data by adding context to the numbers.

Introduction

In this time of rapid growth in information needs and in communication and digital technologies, academic libraries face a hard task, namely to provide effective and efficient ways of delivering information service to their users. Google and Amazon.com’s customer gratification Web-based services have dramatically altered the information landscape, and now academic library users expect similar ease of use and immediate results when accessing information through the library gateway. In addition to this ubiquitous competition from readily available Web sites, academic libraries also face constant changes in subscription packages, formats, and technological advancements. The changing information landscape and users’ demand force academic libraries to confront some tough questions:

portal: Libraries and the Academy, Vol. 6, No. 1 (2006), pp. 59–77.

Copyright © 2006 by The Johns Hopkins University Press, Baltimore, MD 21218.



- How can academic libraries keep up with user expectations?
- How can academic libraries effectively exploit user feedback?
- How can academic libraries shape and influence user expectations?

This task is further complicated by differences in both needs and expectations about library services among faculty, undergraduate students, and graduate students. LibQUAL+™ participants Ellen Hitchingham and Donald Kenney of Virginia Tech felt it important that the constituent groups of undergraduate, graduate, and faculty not “be considered together to create one homogenous entity called ‘our users.’”¹ Perceptions among the three groups tend to be similar for some services but markedly different for others, warranting at least some tailoring of services to specific user groups.²

The LibQUAL+™ survey, conducted for the first time at the University of Idaho (UI) Library in 2004, provided a tool for answering the above questions. This study focused on the graduate student category for the following reasons:

- They have the highest response rate among users responding to the UI survey.
- There are a growing number of distance graduate students located at UI instructional sites across the state.
- Graduate students are a less covered user category in the library literature than undergraduate students.
- Professors’ information needs were the subject of a previous study.³

The authors present a snapshot of the existing library literature on graduate students’ use of academic libraries and their satisfaction with library research resources. We also analyze LibQUAL+™ survey results to evaluate University of Idaho graduate students’ needs and expectations concerning the materials and services offered by the UI Library. The three components of this analysis are:

1. Internal benchmarking comparing survey results among the four user groups at UI
2. External benchmarking comparing the UI results with score norms for the entire group of graduate students at the 147 non-ARL libraries participating in the 2004 survey
3. Interpreting comments made by the graduate students when responding to the survey, a qualitative method used to add context to the quantitative analysis

Graduate Students as Library Users: Literature Review

Numerous studies are devoted to patrons’ use of academic libraries, but only a small body of research examines the specific needs and characteristics of graduate students as a niche user group. Library instruction tends to target undergraduates, generally perceived to be the group most in need of assistance in navigating the complexities of the academic library. Christine A. Barry pointed out that faculty take for granted that librarians are helping graduate students learn to use the library, whereas librarians often assume faculty are addressing this issue.⁴ To presuppose that graduate students are proficient library users, conscious of the full spectrum of library services, can be a mistake. Two studies indicated that the average graduate student is aware of slightly less than half of the library services and that his or her awareness varies regarding type of

service.⁵ Electronic journals and their index counterparts are just one example of value-added library resources of which graduate students may not be fully aware. Virginia Eagan found that even though off-campus graduate students preferred electronic sources to print, many were unaware of the statewide database system that provides access to electronic journal articles.⁶ Dennis Dillon stressed the importance of marketing e-resources: "By definition a new electronic database will not have had time to build up a band of users, and because it represents a substantial investment of library funds, it is important that the library develop a strategy to insure that the database and its potential users are brought together."⁷ In her study, Patricia Maughan noted that the groups of faculty and graduate students who were the heaviest users of electronic library resources also indicated a need for more library instructional services.⁸

Many graduate students both need and want help. However, academic librarians should acknowledge the concept of self-reliance, meaning "the ability—and the desire—to navigate the library, and all its textual and digital resources, independent or almost independent, of library staff."⁹ Colleen Cook and Fred Heath believe that "the user expects the library to provide service for users having various levels of expertise and sensitivities," but most users prefer the rather inefficient route of "independent trial and error."¹⁰ Yvonna Lincoln theorized that "the self-reliant user struggles as a form of opposition to what appears to be an unwieldy system of control, and refuses to comply with orderly (and what must sometimes appear as oppressive) processes for learning about collections, preferring rather an intransigent and slightly triumphant mapping of resources himself or herself."¹¹ Dillon noted the importance of maintaining the library user's "trust" in the library by not leading users down a path of disappointment,¹² a difficult task considering the lack of skill many users possess in navigating the library's e-environment.

The relationship between graduate students and faculty members is critical to the students' success as new researchers. Marilyn Parrish corroborated the significant influence of professors on whether and how graduate students use the library. An unfortunate effect of this influence could occur if faculty unintentionally pass on misperceptions or faulty information about library services to students.¹³ The inclusion of a librarian in the partnership can help to overcome this and other problems. Rosemary Green and Mary Bowser found indications that pairing a collaborative team of a faculty advisor and a librarian with a graduate student alleviated the student's anxiety throughout the thesis process. Student comments ("The collaboration allows for quick feedback for both research and format questions as well as for content questions," and "I can't imagine going through this process without the librarian") implied strong faculty-librarian collaborative relationships with graduate students are an avenue worth exploring.¹⁴

This relationship becomes even more critical for distance students. In John Butler's study, graduate distance students identified a faculty member as the primary communication link for information about the library.¹⁵ Carol Tipton's study of distance graduate students again confirmed the need for increased communication and outreach from the library. Her specific suggestions were an orientation to services, tutorials or other types of instruction on searching methods, and a review of the procedures for accessing the online catalog and electronic resources.¹⁶



Even if they are not distance users, graduate students may not necessarily be frequent visitors to the physical library itself. A number of studies have found graduate students to be among the heaviest users of electronic journals.¹⁷ In addition, the SuperJournal studies revealed that graduate students tended to be binge users, consulting electronic journals extensively for short periods when doing thesis or dissertation research.¹⁸ The DLF/CLIR/Outsell study reported that 80 percent of faculty and graduate students access e-journals online, with 75 percent preferring online access. Compared to faculty or undergraduates, more graduate students professed dissatisfaction with the number of online journal titles.¹⁹

Communicating with patrons who seldom visit the physical space of the library, instead working primarily from their desktop, requires new ways of reaching out. In the electronic landscape, users are often more interested in access rather than actual ownership. Libraries must change their services to adapt to changing users who “are now sometimes, for all intents and purposes, virtual people, interacting with virtual services and virtual and digitized libraries and materials.”²⁰ Additionally, when users are avoiding the traditional forms of library assistance (such as formal instruction, asking for help at the reference desk), it becomes critical that the library Web site, often the primary and first point of contact with the user, is clear in scope and purpose, offers a variety of levels and types of help, and targets services to different user groups.

Summarized, the previous use and satisfaction studies on graduate students indicated the following key findings:

- Graduate students are unaware of the full range of library services and resources.
- Graduate students need and/or desire help in using library resources.
- Faculty greatly influence how and if graduate students use the library.
- Faculty/librarian collaborations have proven effective in assisting graduate students in their information needs.
- Graduate students are heavy users of e-resources, particularly e-journals.
- Graduate students prefer access to networked-based library resources and services.

By examining the key findings from the literature in tandem with the locally obtained results from the LibQUAL+™ survey, this study focuses on using customer benchmarking²¹ and an analysis of survey comments to inform library planning for service improvement to graduate students.

Background of the Study

The University of Idaho is a research extensive, land-grant institution with a focus on undergraduate and graduate research education and extension services. The university is ranked among the most wired and wireless public universities in the West. The student body population consists of 9,047 undergraduate students and 2,595 graduate students, of which 1,747 students are enrolled in masters programs, 630 in doctoral programs, and the rest are undecided. Graduate degrees are offered from 47 departments.²² Graduate students are located in five different instructional centers—the Moscow campus and resident instructional centers in Boise, Coeur d’Alene, Idaho Falls, and Twin Falls. The UI also offers distance education graduate degrees through the Engineering Outreach Program.

The UI Library, located at the Moscow campus, serves UI users at all five centers and is the state's largest library with regional GPO depository items, Northwest special collections, and regular collections (totaling more than 2.5 million items). Collections reflect UI's programs of primary emphasis in agriculture, forestry, metallurgy, engineering, architecture, foreign languages, and teacher preparation, with support for business, education, liberal arts, and sciences. The UI Library's information gateway, <http://www.lib.uidaho.edu>, provides access to what has become the standard array of electronic resources and services in American academic libraries today.

Survey Procedure and Return

The UI Library was one of 202 libraries in the United States, Canada, and Europe that administered the 2004 LibQUAL+™ survey. The Institutional Research and Assessment Office selected a representative sample of participants from the four user categories of faculty, staff, graduate and undergraduate students. The LibQUAL+™ survey team's recommendation of a random sample size of 600 faculty, 900 undergraduates, 600 graduate students, and 600 staff was followed for a total sample size of 2,700 library users. To be included in the selection, a graduate student had to be enrolled full time. Additionally, professional students from the law school and pre-medical studies were excluded. Between March and April 2004, the selected sample population received up to three e-mail invitations from the library dean to participate in the LibQUAL+™ survey. In hopes of increasing survey participation, the library offered a drawing for a Dell DJ 15 digital music player and 20 pizza gift certificates. Out of the total selected sample of 2,700 faculty, staff, undergraduate and graduate students, 571 valid surveys were returned for a response rate of 21 percent. Among the user categories, undergraduate students represented the largest group of respondents (40.5 percent). They were followed by graduate students (33.7 percent), then faculty (18.6 percent), and staff (7.2 percent). Survey respondents provided 275 useful written comments, which were organized and analyzed using Excel software.

Survey participants marked on a Lickert scale (from 1 to 9, with 9 the most preferable) their responses to 22 LibQUAL+™ questions associated with library service quality in the three survey dimensions of information control (IC), affect of service (AS), and library as place (LP), as well as the categories of frequency of library usage, general satisfaction, and information literacy outcomes. IC encompasses the realms of scope, timeliness, convenience, ease of navigation, modern equipment, and self-reliance; AS includes the empathy, responsiveness, assurance, and reliability of library employees; and LP measures how users view the library as a utilitarian space, symbol, or refuge. For each question, respondents rated their current perception of library service quality, minimum levels of service they were willing to accept, and their desired level of service. The survey also provided space for participants to elaborate by commenting on library resources and services.

In the three survey dimensions of IC, AS, and LP, results from the LibQUAL+™ survey were used to estimate means for the following measures of service—perceived level of service, adequacy gap, and superiority gap. Perceived level of service is simply the actual level of service users *perceive* to have been provided. The adequacy gap is the



perceived level of service minus the minimum level a user is willing to accept; thus, a negative adequacy score indicates that perceived service quality is below the minimal acceptable level. The superiority gap is calculated by subtracting the desired score from the perceived score; therefore, a positive service superiority score indicates that the perceived level of service is above the desired level of service.²³

Profile of Graduate Student Survey Respondents

Out of a total qualified 2,595 graduate students, the selected sample was 600 or approximately 23 percent of the total acceptable population. The subcategory of 141 master's graduate students had the highest response rate (24.69 percent). Other graduate student subcategories were 47 doctoral students (8.63 percent of survey respondents) and four undecided graduate students (0.70 percent). Demographically, graduate student survey respondents closely represent the UI graduate student population (see table 1). Fields of study of the total graduate student population were fairly well represented with the largest discrepancy occurring in education.

Graduate Students Survey Results

Internal Benchmarking

Table 2 compares the mean scores of UI graduate students with the three other UI survey groups. The total mean scores for graduate students show their perceived level of service is 7.00 with a positive adequacy gap of 0.49, indicating their satisfaction exceeded their minimum expectations. There was a negative superiority gap of -0.88, indicating their perceived level of service is not as great as their desired level of service. The significant findings from this internal benchmarking are as follows:

- Graduate students and faculty have high minimal levels of acceptable service and desired service in the information control dimension.
- Overall, faculty perceptions of quality in information control are below their minimal acceptable levels. Even though the mean adequacy gap score for graduate students in information control is positive, the score for one specific question: "IC-8: Print and or electronic journal collections I require for my work" was -0.37.
- Undergraduates have the highest levels of both minimal acceptable service and desired service in the library as place dimension. Graduate students have the next highest level of minimal acceptable service but are slightly below staff in desired level of service.
- In the affect of service dimension, for all four survey groups, the range between the mean scores of both adequacy and superiority is less than the other two dimensions, meaning that users highly value the human aspect of library services.

External Benchmarking

Using score norms to interpret the survey data tells "us how scores 'stack up' within a particular user group."²⁴ Norms add value to the data by allowing the comparison of

Table 1
Descriptive Statistics

	Population N	Population %	Respondents n	Respondents %
Gender				
Male	1,628	55.00%	107	55.73%
Female	1,332	45.00%	85	44.27%
Age				
18-22	59.2	2.00%	6	3.13%
23-30	1746.4	59.00%	116	60.41%
31-45	769.6	26.00%	48	25.00%
46-65	355.2	12.00%	21	10.94
Over 65	29.6	1.00%	1	0.52%
Fields of Study				
Agriculture/Environmental Studies	154	6.08%	18	9.38%
Architecture	55	2.17%	10	5.21%
Business	21	0.83%	3	1.56%
Communications/Journalism	20	0.79%	0	0.00%
Education	764	30.16%	29	15.10%
Engineering/Computer Science	376	14.84%	27	14.06%
General Studies	0	0.00%	1	0.52%
Health Sciences	18	0.71%	6	3.13%
Humanities	73	2.88%	15	7.81%
Performing & Fine Arts	65	2.57%	5	2.60%
Science/Math	610	24.08%	47	24.48%
Social Sciences/Psychology	265	10.46%	13	6.77%
Other	50	1.97%	18	9.38%
Undecided	62	2.45%	0	0.00%

UI graduate student raw scores with graduate student scores at peer (non-ARL) institutions and “characterize factually what percentage of users or of institutions generated lower ratings.”²⁵ Norms add context to raw scores. Bruce Thompson’s score norm tables were used to compare what percentage of graduate students at the 147 American non-ARL colleges and universities that participated in the 2004 LibQUAL+™ survey scored lower than the UI graduate students.²⁶



Table 2
Internal Benchmarking / Service Measure Comparative Analysis

	Perceived Service Quality						Adequacy Gap						Superiority Gap								
	Mean UI		Mean UI		Mean UI		Mean UI		Mean UI		Mean UI		Mean UI		Mean UI		Mean UI				
	Grad	Faculty	Staff	Undergrad	Grad	Faculty	Staff	Undergrad	Grad	Faculty	Staff	Undergrad	Grad	Faculty	Staff	Undergrad	Grad	Faculty	Staff	Undergrad	
Total	7.00	7.00	7.10	7.02	0.49	0.51	0.70	0.75	-0.88	-0.81	-0.86	-0.67	-0.88	-0.81	-0.86	-0.67	-0.88	-0.81	-0.86	-0.67	
Dimensions																					
Information Control (IC)	7.02	6.75	6.97	7.08	0.12	-0.14	0.50	0.65	-1.25	-1.52	-1.09	-0.84	-1.25	-1.52	-1.09	-0.84	-1.25	-1.52	-1.09	-0.84	
Affect of Service (AS)	7.13	7.40	7.23	6.90	0.75	0.83	0.68	0.81	-0.61	-0.50	-0.79	-0.67	-0.61	-0.50	-0.79	-0.67	-0.61	-0.50	-0.79	-0.67	
Library as Place (LP)	6.72	6.63	6.96	7.09	0.66	1.18	1.20	0.81	-0.72	-0.01	-0.53	-0.71	-0.72	-0.01	-0.53	-0.71	-0.72	-0.01	-0.53	-0.71	

The comparative analysis by norms (see table 3) shows that, overall, UI graduate students' scores are in the mid-percentile (graduate students who score lower range from 43 percent to 59 percent). The more specific significant findings are listed below.

- Compared to the peer group, the UI graduates are above the 50th percentile in adequacy gap scores in all three of the survey dimensions, signifying that the UI Library provides service exceeding minimum levels of acceptable service.
- In perceived service quality, only 43 to 45 percent of the peer group scored lower, indicating a need to increase perceptions of quality in all three dimensions.
- Even though the other study methodologies (internal benchmarking and analysis of comments) indicate information control as the area needing the most attention, UI is not significantly above or below the majority of the peer group (ranging from 44 percent in perception to 55 percent in adequacy).

Analysis of Graduate Student Comments

Of a total of 192 graduate students who responded to the survey, 107 made comments (56 percent) compared to only 37 percent of undergraduates who responded. The graduate students' comment rate fell slightly short of the 60 percent response rate for faculty who added comments. Their numerical placement on the spectrum between undergrads and faculty makes sense. The library is more indispensable and familiar to graduate than to undergraduate students, but they have yet to become full-fledged members of the academy. They are still struggling to make research and the library their own. They are "academics in training."²⁷

The use of qualitative data in library research—the meaningfulness, measurability, and relationship to quantitative data—has been much debated over the years.²⁸ Qualitative data, however, whether drawn from survey comments, focus group participants, or individual interviews, provide richness and context that add life to the numbers and meat to the bones of the quantitative data. If we reflect on our own ex-

Qualitative data, however, whether drawn from survey comments, focus group participants, or individual interviews, provide richness and context that add life to the numbers and meat to the bones of the quantitative data.

perience in answering surveys and questionnaires, we know that taking the time and effort to express ourselves in our own words usually indicates a certain amount of enthusiasm or frustration on our part. Survey givers and analysts should reciprocate by thoughtfully considering each comment not only by itself but also in the context of the other comments made by survey respondents.

Using Richard Krueger and Mary Anne Casey's recommendations on how much weight to give comments that emerge from focus group discussions (for example, frequency, specificity, emotion, and extensiveness—that is, how many different people say the same or similar things),²⁹ six broad themes emerged from the comments:



Table 3

Norms / Graduate Student Comparative Analysis
(n = 7,440 graduate student non-ARL participants)

	Perception		Adequacy Gap		Superiority Gap	
	Mean UI Grad	Percentile %	Mean UI Grad	Percentile %	Mean UI Grad	Percentile %
Total	7.00	43-44	0.49	58-59	-0.88	49-50
<i>Dimensions</i>						
Information						
Control (IC)	7.02	44-45	0.12	53-55	-1.25	45-48
Affect of						
Service (AS)	7.13	44-45	0.75	58-59	-0.61	47-48
Library as						
Place (LP)	6.72	43-44	0.66	57-58	-0.72	46-47

- Unreliability of lower order technology (photocopiers, microform machines)
- Availability of journals
- Outdated books
- Physical surroundings (computers, seating, lighting, and so on)
- Interlibrary loan
- Budget concerns

These can be placed as follows into the three LibQUAL+™ survey dimensions. The first three fall within information control and the fourth within library as place, whereas the last two straddle the line between several dimensions (interlibrary loan covers both IC and AS, whereas budgetary issues are relevant to all three dimensions).

Information Control: Lower Order Technology

Photocopiers and microform machines that do not work properly thwart and frustrate library users. Apparently the photocopier or microform reader/printer that will function reliably for a long queue of users has yet to be invented. It cannot be purchased even by the large ARL libraries that have vastly larger collections and geometrically larger budgets than the UI Library, for complaints about this lower order machinery from the users of those larger, richer libraries were remarkably similar to the ones the UI received in the survey.³⁰ It is common knowledge that mechanical problems can define a user's relationship with a place—the ATM card that gets swallowed, the shopping cart that does not drive straight, the photocopier that jams. If the library could deal with its mechanical problems promptly, think how happy users would be.

Some typical comments about photocopiers and microform equipment were:

My only huge problem with the library is the quality of the photocopiers. Not only do they seem to jam every other copy, have poor quality, and too expensive for the produce that comes out, but they need to be available on ALL floors, not just 1 and 2. . . . I would very much like to see new copiers!

Microfiche and microfilm readers are ridiculously outdated and nearly useless. Library desperately needs new readers and more of them. Otherwise the collection is pointless.

The outdated copy machines have made many of my trips to the library to copy materials from journals and books miserable. The copy center is not always open when I come, so it is necessary that the copy machines function reliably and (hopefully) do not expend my time by overheating or breaking. This is my only major gripe with the library.³¹

Information Control: Journals

The clear call is for more journals, especially in electronic format. Graduate students as well as faculty want more, and they want titles in their own field. The disciplines specifically mentioned ran the gamut from literary criticism to agricultural engineering and included structural engineering, earth science, social and natural resource science, industrial/organizational psychology, and accounting. An important point was noted—when specific journal titles were mentioned as not being in the collection, a search of the journal list turned up at least the most recent years of those titles in electronic format. The difficulty is that often we do have the desired journals, but they are now in electronic form for at least some years with the older print issues located in the stacks. The idiosyncrasies of part electronic and part print subscriptions are difficult to explain clearly and uniformly. Although the library has made a conscious effort to provide multiple access points to journal title and holdings information, including the OPAC and a journal list (“Serial Solutions”), many students are still unsure of how to find journal information.

When respondents were aware of the addition of a new source, they were grateful: “The recent addition of new journals online (especially JSTOR) has been wonderful and a great time-saver! Please keep it up!” This respondent nicely summed up the basic attitude about electronic journal subscriptions: “Our Library is good, in general, but we could use more access to pdf articles instead of the actual journals. Electronic copies are MUCH more useful than the actual printed journals.”

Information Control: Outdated Books

In computer science and other science fields, graduate students want new books. Their complaints led to several considerations. First, the weeding process should be more ruthlessly followed, despite the tendency to think that someone, someday, might want a given historical science text. Second, does the existence of e-books make its way into the consciousness of the graduate students? The availability of e-books could be more widely publicized and emphasized as an alternative way of accessing books in full-text format. The only question is whether graduate students are as willing to browse and use e-books as they are paper.



As one graduate student stated:

The number of books in the computer science section is tiny and the ones that are there are WAY too old. That whole section is pretty much useless for anyone doing a computer science degree. The library needs to seriously consider updating books if it is going to be of any use to CS majors.

The following user dismisses the UI Library entirely, seemingly on the basis of the age of the books in his/her field.

I am not at all satisfied with our library, in other universities library is the place where u spend most of your time which gives you very good environment for study, but i went to our library few times and now i no longer go there i find very few from my dept who spend there time in library there is not enough material for any subject all books are very old almost of no use it is very difficult to find anything in library. this is the one thing i most regret my self in Univ of Idaho.

Library As Place

Comments pertaining to this dimension showed a desire for comfort, good lighting, and quiet—that is, the fundamental virtues of a typical library. However, for some users computers spoil the atmosphere—“In general, I’m very happy with the library except way too many computers. Computers of this quantity belong in a computer lab.”³² To others, the presence of so many computers is happily noted, as follows:

To stress some positives, I am pleased with the amount of computer terminals that are available. I also feel like the library is spacious and that the upper floors provide many areas for study. I also enjoy the exhibits that are located on the lower level.

Other comments relating to the physical aspects of the library ranged from a plea to fix the air conditioner to improve the “very low” air quality to suggestions that a 7:00 a.m. opening time would be terrific. The one comment that was repeated and does need to be addressed is the need for more space for quiet study and graduate carrels. In the reconfiguration process of the periodicals floor, this request will be considered.

Information Control and Affect of Service: Interlibrary Loan

Interlibrary loan (ILL), based on the number and extent of the graduates’ comments, is recognized as the very heart of the UI Library’s efforts to expand access beyond its walls. No other area of service elicited either the number or extent of comments; interestingly, the comments were exactly evenly divided between positive and negative. The graduate students loved it:

Interlibrary Loan has been utterly FANTASTIC. Words cannot describe how useful it has been and how impressed I am with the assistance I’ve received there. My degrees are owed in part to that department. Outstanding in every way.

or hated it:

Inter-library loan has been in my experience, very ineffective. I have requested materials in the past and never received the requested documents, notification of document availability, nor confirmation of my request.

Without a doubt, though, the graduate students knew of its existence and recognized the necessity of interlibrary loan.

I believe our library does an effective job. As a graduate student, my biggest need is access to journals in my field of study. I realize having all journals in all fields is a tall order but the extent of our current journal collection, in my view, is limited. I use the interlibrary loan program often and it does a fine job, it is simply easier if the resource is at your fingertips.

Whether they used ILL to get articles or books often seemed the crux of the matter. Books came too slowly, and the students were unhappy; articles came quickly and electronically, and the students appreciated that.

Interlibrary loan needs to be improved. I work through the campus at the extension within Idaho Falls and I was constantly battling to get books down here in a timely manner and then had difficulties getting the books back up to you through the library system on time, thus I stopped using the interlibrary loan to get books. However, you do an excellent job at getting journal articles and other papers through requests by e-mail.

Cook and Heath suggest that a one-week turnaround time for getting books via interlibrary loan is perceived as acceptable.³³ This seven-day period seems to be ingrained in researchers' brains as the acceptable limit; it was mentioned a number of times as the "ideal" time period for getting a book.

Information Control, Affect of Service, and Library as Place: Budget Woes Affect All Three

A number of thoughtful comments reflected the awareness of the financial problems that have affected the UI and the library in the past several years. Almost all such comments mentioned the effect of the budgetary restraints on more than one dimension of the survey results. There is seamlessness to the following summarizing comments (whether they are critical or supportive of the library's efforts) that reveals how closely related all aspects of library services and resources are.

I think the library attempts to stay ahead in the field and provide the best they can. But do to money shortages they fail to help me get the information that I need because they don't have the money to replace books or continue subscriptions of journals. . . . It is a tough fight now to acquire research rooms in the library for quiet study. If we are to be a tier one research school and we need to have the tools, i.e. a great library, to help fulfill that objective, and I think we fall short.

The lack of financial support for the library to maintain acceptable levels of periodical subscriptions, a wider variety of online databases, and the acceptable computer equipment (especially in contrast with the student computer labs) for conducting library research hampers the library's ability to provide excellent service and a comfortable, appealing, confidence-producing experience for library users.



In my opinion . . . our U of I library is GREAT and so are the people who work there. I know the Library is under funded and its amazing the high quality of service that is continuously offered . . . although that seems to be the norm here on the U of I campus and I'm very thankful that this is the case.

Putting Survey Results into Practice

Using the customer-oriented results of the LibQUAL+™ survey as one planning tool can help to change the UI Library into a marketing-aware organization that “matches its human, financial and physical resources with the wants and needs of its customers.”³⁴ Evaluating both the quantitative and qualitative results of the LibQUAL+™ survey, in conjunction with a variety of other assessment activities the UI Library has been involved in, has resulted in conversations about how the library might become a more user-centered, responsive institution within the rather severe budget constraints under which it currently operates.³⁵

A major hurdle to overcome before a library can become a user-oriented organization is the recognition that customer service means “meeting the needs and expectations of the customers as defined by the customers.”³⁶ Rowena Cullen suggests a partial

Although most users do not have a full understanding of the complexities of library systems, in order to implement customer-based changes, librarians must accept user perceptions as valid statements of how patrons feel.

reason why it is so difficult to accept the customer as the judge of quality: “Librarianship has high ideals, and these lead to perceptions that what libraries do has value. Perhaps it also leads to a somewhat paternalistic view that we know what patrons need and want and can be trusted to deliver it.”³⁷ This view is self-defeating when it keeps the library from focusing on the needs and wants of the customer. Johnson further explains this tendency: “Non-profit organizations that are focused on themselves rather than their cus-

tomers display certain characteristics. They see their services as inherently desirable, blame customer ignorance or lack of motivation when their services are not used, relegate research about customers to a minor role . . . and assume that they have no generic competition.”³⁸ Although most users do not have a full understanding of the complexities of library systems, in order to implement customer-based changes, librarians must accept user perceptions as valid statements of how patrons feel. While academic libraries as non-profit institutions have been slow to implement customer-based assessment, the retail world has long understood the importance of listening to the customer.

Both the research on graduate students in libraries and reading of the comments from the LibQUAL+™ survey suggest that some of the negative perceptions are a result of graduate students’ lack of awareness of certain services and resources and/or their lack of proficiency in navigating the library’s information systems effectively. Whereas improving services and collections in the three dimensions of information control, affect of services, and library as place are important, it is necessary to factor in the signifi-

cant positive influence improved “design, marketing, and delivery of services” should have on users’ perceptions of library service quality. The recommendations for improving niche services to graduate students include both actions that the UI Library has already taken and ideas to explore in the near future.

Information Control

Both the mean adequacy and superiority gaps indicate that the area of information control causes the most dissatisfaction among the graduate students. Survey question IC-8, “Print and/or electronic journal collections I require for my work,” is the only question on the survey scoring a negative adequacy gap for graduate students, indicating that graduate students perceive journal collections to be below their minimum standard. Although no other survey question had a negative adequacy gap, an analysis of the quantitative data and the comments show that graduate students have both high levels of minimum acceptable service and desired service in wanting modern equipment to easily access information, a library Web site that is easy to navigate on one’s own, and plentiful resources (particularly electronic) that are accessible from outside the library walls. Unfortunately, within the area of information control, it is difficult to pinpoint whether user dissatisfaction results from an actual lack of tangible resources, like adequate e-journals, or a lack of awareness of resources. Therefore, the following actions stress both tangible resources and the marketing and delivery of services and resources.

- A graduate students’ Web page was recently added to the library’s Web site to bring together targeted resources in one convenient location. Compiling a set of links on the Graduate Student Services home page to guides of specific interest to graduate students is a way to meet the needs of virtual users who prefer to navigate the library Web site on their own.
- Targeted instruction for graduate students, including classes on bibliographic managers and subject-specific databases, and a graduate student seminar once a semester that is part of a required seminar series for all teaching assistants have been implemented.
- Librarians have recently begun to “take the library to the departments” by offering sessions in departments at faculty meetings or other arranged times. These sessions focus on article indexes and databases of specific interest to the departments’ subject disciplines and have been well received by the faculty and graduate students who attended. Some subject librarians are interested in exploring a more informal method of outreach beyond the walls of the library by holding office hours in various departments. At least one student was unaware of how to contact subject librarians commenting, “It would be nice to have information specialists for different colleges and information on how to reach them.”
- The library is improving access to e-journals. To assist with identifying and linking e-journals, the library recently contracted for a “current journal list” and an “OpenURL resolver” of all our print and electronic journal holdings. The recent acquisition of four large collections of e-journal backfiles greatly extends online journal holdings. The total number of full-text journal titles has increased dra-



matically from 4,380 in 2000 to approximately 26,000 titles now on our journal list. Marketing efforts need to emphasize the increased number of titles as there continues to be a perception that the library “is cutting” journals.

- Rounding out the collection of article indexes and databases to reflect disciplines in the arts, humanities, and social sciences is a recent focus. Several recent purchases have added indexes in education, literature, and music.

Affect of Service

According to survey results, the library’s greatest strength is in the area of affect of service, basically the human aspect of library services—courteous, helpful employees who have the knowledge to assist users with their questions. Many comments reflected a desire on the part of the respondent to point that out, in spite of some negative factor. For example, “UI’s [literature collection] is mediocre” . . . but . . . “[personnel] generally bend over backward to help you find what you need.” Pointed negative comments regarding personnel generally had to do with a specific instance:

There have been two or three times when the student workers could not answer a question I had and did not even think about asking a librarian who could help me. However, again, I think that overall my experience has been pretty good; it is just a few bad experiences that have lowered many of my answers on Perceived Service.

This comment and others like it serve as a reminder that each encounter that library personnel have with users may be the basis of their perception of library service.

Some of the recommendations given in the area of information control are equally applicable in the dimension of affect of service. Increased opportunities to interact with librarians through seminars, targeted instruction, and other efforts will help graduate students view them as helpful, knowledgeable people.

Library as Place

Although the virtual library user is becoming commonplace, there are those for whom the physical space of the library remains important. Graduate students particularly value

Although the virtual library user is becoming commonplace, there are those for whom the physical space of the library remains important.

quiet study space and several commented on the need for more areas with comfortable furniture for relaxing. The demand for study carrels in the library is high, and the waiting list is long. Although quiet study space where one can leave books and other items is very popular, adding more may not be a feasible option in a facility where

space is at a premium. Even before the library participated in the LibQUAL+™ survey, there was an awareness of the conflicting desires of users regarding the library as place. Some students want more areas for group study, whereas some want more quiet study. Some want computers on every floor, whereas others resent the number of computers now in the library.

A major initiative currently being worked on is the information commons. Although the most publicized part of the commons project would be to provide equipment, space,

and assistance for technologies that facilitate computer access, group collaboration, and multimedia, the concept also includes a reallocation of space to accommodate users' needs. For example, a major part of the funding would be used for compact shelving on the periodicals floor that would create more group study spaces that are highly desired by the undergraduates and graduates. The library plans to make better use of space and create a more inviting, comfortable ambience for users.

Conclusion

The LibQUAL+™ results helped the UI Library define its strengths and weaknesses and prioritize service and collection improvements. In particular, analyzing survey data with a focus on a single constituent group—graduate students—increased institutional awareness of which library services and resources they value most highly. By enlarging the collection of electronic journals, improving navigation of the library Web site, creating new information literacy instruction and tutorials, and planning to increase quiet study space, the UI Library is improving areas of service quality to graduate students.

Revisiting the three research questions of this study, it is worth stating:

- Academic libraries can keep up with users' growing expectations only by continued assessments of their service quality. The LibQUAL+™ survey and other assessment tools could become a part of a library's ongoing planning process in order to evaluate the impact of implemented changes.
- Users' feedback can be effectively utilized to improve the quality of academic library services by recognizing specific user-group needs (in this study, graduate students), their satisfaction with and expectations of the library network-based resources, collections, and services.
- Academic libraries can shape and influence user expectations toward library service by educating users, marketing their collections and services, and discovering information needs of specific user groups.

By using internal benchmarking to compare UI graduate students with UI undergraduates and faculty, the library gained insight about the sometimes very different perceptions and needs of these groups. Using score norms to compare UI graduate students with graduate students at other non-ARL institutions provided a meaningful way to measure survey outcomes against a large peer group. Analyzing survey comments added context to the numbers and allowed a better understanding of the LibQUAL+™ survey results. Participating in the survey and conducting a detailed evaluation of the results for one specific user group has not given the UI Library all the answers but has certainly increased recognition of how UI graduate students view the library and what services they value most.

Maria Anna Jankowska is research reference librarian, University of Idaho Library, Moscow, ID; she may be contacted via e-mail at: majanko@uidaho.edu.

Karen Hertel is interim head of government documents, University of Idaho Library, Moscow, ID; she may be contacted via e-mail at: karenh@uidaho.edu.



Nancy J. Young is reference and instruction librarian, University of Idaho Library, Moscow, ID; she may be contacted via e-mail at: nyoung@uidaho.edu.

Notes

1. Eileen E. Hitchingham and Donald Kenney, "Extracting Meaningful Measures of User Satisfaction From LibQual+™ for the University Libraries at Virginia Tech," *Performance Measurement and Metrics* 3, 2 (2002): 57.
2. Ibid.
3. Maria A. Jankowska, "Identifying University Professors' Information Needs in the Challenging Environment of Information and Communication Technologies," *Journal of Academic Librarianship* 31, 1 (January 2004): 51–66.
4. Christine A. Barry, "Information Skills for an Electronic World: Training Doctoral Research Students," *Journal of Information Science* 23, 3 (1997): 225–38.
5. Abraham A. Azubuike and Monica A. Greaves, "The Reference Services of a Research Library," *International Library Review* 21, 4 (1989): 337–46; Carlette Washington-Hoagland and Leo Clougherty, "Identifying the Resource and Service Needs of Graduate and Professional Students: The University of Iowa User Needs of Graduate Professional Series," *portal: Libraries and the Academy* 2, 1 (January 2002): 125–43.
6. Virginia Eagan, "Information Needs, Sources, and Accessibility Requirements of Pharmacy Students Learning in Off-Campus Settings" (master's thesis, University of North Carolina, 1994).
7. Dennis Dillon, "Strategic Marketing of Electronic Resources," *The Acquisitions Librarian* 14, 28 (2002): 124.
8. Patricia Davitt Maughan, "Library Resources and Services: A Cross-Disciplinary Survey of Faculty and Graduate Student Use and Satisfaction," *Journal of Academic Librarianship* 25, 5 (1999): 354–66.
9. Yvonna S. Lincoln, "Insights into Library Services and Users from Qualitative Research," *Library & Information Science Research* 24, 1 (2002): 10.
10. Colleen Cook and Fred Heath, "Users' Perceptions of Library Service Quality: A LibQUAL+ Qualitative Study," *Library Trends* 49, 4 (Spring 2001): 553.
11. Lincoln, 12.
12. Dillon, 117–34.
13. Marilyn M. Parrish, *Analysis of Graduate Student Research at Bowling Green State University* (Ohio: Bowling Green State University, 1989), ED 309 771.
14. Rosemary Green and Mary Bowser, "Managing Thesis Anxiety: A Faculty-Librarian Partnership to Guide Off-Campus Graduate Education Students Through the Thesis Process," *Journal of Library Administration* 37, 3/4 (2002): 351.
15. John Butler, "From the Margins to the Mainstream: Developing Library Support for Distance Learning," *LibraryLine: An Occasional Newsletter of the University of Minnesota Libraries-Twin Cities* 8, 4 (May 1997): 1–4.
16. Carol J. Tipton, "Graduate Students' Perceptions of Library Support Services for Distance Learners: A University System-Wide Study," *Journal of Library Administration* 32, 1/2 (2001): 393–408.
17. Lawrence M. Rudner, Marie Miller-Whitehead, and Jennifer S. Gellmann, "Who Is Reading On-line Education Journals? Why? And What Are They Reading?" *D-Lib Magazine* 8, 12 (December 2002), <http://www.dlib.org/dlib/december02/rudner/12rudner.html> (accessed September 27, 2005); Donald W. King and Carol Hansen Montgomery, "After Migration to an Electronic Journal Collection," *D-Lib Magazine* 8, 12 (December 2002), <http://www.dlib.org/dlib/december02/king/12king.html> (accessed September 27, 2005).
18. SuperJournal, "SuperJournal Baseline Studies Report" (Oxford: eLib Programme, 1999), <http://www.superjournal.ac.uk/sj/baserept.htm> (accessed September 27, 2005).

19. Amy Friedlander, "Dimensions and Use of the Scholarly Information Environment: Introduction to a Data Set Assembled by the Digital Library Federation and Outsell, Inc.," Council on Library and Information Resources (Washington, D.C.: Digital Library Federation and Council on Library and Information Resources, November 2002), <http://www.clir.org/pubs/reports/pub110/contents.html> (accessed September 27, 2005).
20. Lincoln, 11.
21. Rowena Cullen, "Benchmarking: Overview and Context" (paper, World Library and Information Congress: 69th IFLA General Conference and Council, Berlin, August 1–9, 2003) <http://www.ifla.org/IV/ifla69/papers/015e-Cullen.pdf> (accessed September 27, 2005).
22. Graduate Studies Home Page, University of Idaho, <http://www.grad.uidaho.edu/default.aspx?pid=32278> (accessed September 27, 2005).
23. *LibQual+™ Spring 2004 Survey: University of Idaho* (Washington, D.C.: Association of Research Libraries, 2004), 10.
24. *Ibid.*, 13.
25. Colleen Cook, Fred Heath, and Bruce Thompson, "A LibQUAL+™ Primer," *ARL Bimonthly Report* 230/231 (October/December 2003), <http://www.arl.org/newsltr/230/lqprimer.html> (accessed September 27, 2005).
26. Thompson, Bruce, "LibQUAL+™ Spring 2004, Selected Norms," <http://www.coe.tamu.edu/~bthompson/libq2004.htm#15> (accessed September 29, 2005).
27. Cook and Heath, 559.
28. Lincoln, 10.
29. Richard A. Krueger and Mary Anne Casey, *Focus Group: A Practical Guide for Applied Research*, 3rd ed. (Thousand Oaks, CA: Sage, 2000), 24.
30. Cook and Heath, 573.
31. Note that all misspellings and grammatical errors were present in the original comments. All comments are anonymous.
32. Note that the University of Idaho Library houses two computer labs that are staffed by IT employees.
33. Cook and Heath, 570.
34. Mike Meldrum and Malcolm McDonald, *Key Marketing Concepts* (London: Macmillan Press, 1995), 3.
35. Karyle Butcher, Steve Smith, and Steven D. Zink, "An External Review of the Library and Information Technology Self-Study Report and Related Documentation, University of Idaho" (October 2003); 2004 Northwest Commission on Colleges and Universities (NWCCU) accreditation process; and ongoing focus group sessions in collaboration with Information Technology Services.
36. Susan Smith, "How to Create a Plan to Deliver Great Customer Service," in *Best Practice in Customer Service*, ed. Ron Zemke and John A. Woods (New York: AMACOM, 1999), 55.
37. Cullen, "Perspectives on User Satisfaction Surveys," *Library Trends* 49, 4 (Spring 2001): 679.
38. Diane T. Johnson, "Focus on the Library Customer: Revelation, Revolution" or Redundancy?" *Library Trends* 43, 3 (1995): 323.