

LibQUAL+™ and the Evolution of “Library as Place” at Radford University, 2002-2006

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Introduction

Changes in Library as Place

Based on the results of the 2002 LibQUAL+™ survey, changes were made to the space and furnishings within McConnell Library as funding became available. The fifth floor was designated as a quiet study area. The hardware and software was upgraded for the public access computers located in the reference area and the instructional computers in Library Classroom A. Additional computers were added via the construction of Library Classroom B. Instructional computers are available for public use during those times when the classrooms are not scheduled for library related workshops. More comfortable furniture was added to the Main Lobby, a popular place for students to meet and congregate. Hours of operation were extended as well. Monday through Friday, the library opened fifteen minutes earlier in the morning at 7:45am to accommodate those students wishing to come in and print assignments just before their morning classes. On Fridays the library closed two hours later at 7:00pm, and opened two hours earlier at noon. Adjacent to the Main Lobby a coffee shop and café named “Stacks” was opened in 2000. Unlike the other improvements it was not done in response to the 2002 LibQUAL+™ survey results. However, in 2002 it was still a relatively new service for many of the library users, and no assessment of it has been done so far, so it seemed reasonable to include it in this study.

Objective

Did these changes to the library’s physical spaces in response to users’ feedback have any effect on these users’ satisfaction with the Library as Place? The goal of this exploratory study is to see if the LibQUAL+™ survey can capture any changes in user satisfaction with the McConnell Library due to these physical alterations made between the 2002 and 2005.

Setting

The John Preston McConnell Library is the academic library that serves Radford University (RU). RU is a medium sized, four-year, primarily residential public university located in the Blue Ridge Mountains of Southwestern Virginia. It has an enrollment of approximately

9300 undergraduate and graduate students and a basic Carnegie classification of Master's L (Master's Colleges and Universities, Larger programs.)

Participants

As the faculty and students were the overwhelming majority of library users, only their participation was considered for this study. More specifically, participants in this study are restricted to the undergraduates, graduate students, and faculty who completed the 2002 LibQUAL+™ survey; the undergraduate and graduate students who completed the 2005 LibQUAL+™ survey; and the faculty who completed the 2006 LibQUAL+™ survey.

Method

Design

This study uses an effect size meta-analysis experimental design. Effect size measures the amount of specified phenomenon in a population under study (Grissom & Kim, 2005; Cooper, 1998; Cohen, 1988; Kline, 2005). The effect size has several advantages. It provides a measure of practical significance by providing both its magnitude and direction (positive or negative), neither of which is provided by traditional null hypothesis significance testing (NHST). In addition, unlike NHST, effect size is neither sensitive to sample size nor restricted to “yes” (significant) or “no” (not significant) results (McNamara, 1994; Kline, 2005; Grissom & Kim, 2005; Cooper, 1998; Lipsey & Wilson, 2000; Cumming & Finch, 2005).

Of particular interest for this study is the type of effect size that measures the difference between two sample means (the control and experimental) in terms of standard deviation units, or the standardized mean difference (Lipsey & Wilson, 2000). This allows the comparison of standardized mean differences from similar studies (e.g., 2002, 2005, and 2006 LibQUAL+™ surveys) using meta-analysis (McNamara, 1994; Kline, 2005; Cumming & Finch, 2001). For this study, the 2002 LibQUAL+™ means (M_{2002}) will function as the control (M_C) while the 2005 and 2006 means (M_{2005} and M_{2006}) are the experimental (M_E). This gives the added benefit of representing any improvement in user satisfaction as positive values, and any decline as negative ones (Kline, 2005).

Meta-analysis is a research synthesis technique designed to combine findings from comparable studies that use differing metrics (Cooper, 1998; Lipsey & Wilson, 2000). The disparate metrics are converted to a common effect size metric, which is weighted by sample size then averaged (Kline, 2005; Lipsey & Wilson, 2000; Cooper, 1998). The final aggregated results

have more statistical power, greater accuracy, and higher credibility than any one of the contributing studies (Lipse & Wilson, 2000; Kline, 2005).

Survey instrument

LibQUAL+™ is a library quality of service survey instrument developed by the Association of Research Libraries and the Texas A&M Libraries. The survey uses 22 items to determine customer satisfaction within three dimensions: Affect of Service, Information Control, and Library as Place (ARL, 2007). A comment box is also included. This varies from the 2002 version which had 25 items over four dimensions: Access to Information (5 items), Affect of Service (9 items), Library as Place (5 items), Personal Control (6 items) (Cook, Heath, & Thompson, 2003). In the interim between 2002 and 2005, two of the dimensions (Access to Information and Personal Control) were merged into one (Information Control) (ARL, 2002; ARL, 2005).

Both versions of the LibQUAL+™ survey use gap analysis. Each respondent rates each item on a 1 to 9 scale (9 being the highest) for three levels of service quality: minimum acceptable, perceived (or current), and desired (or maximum). The differences between these three scores are the “gaps” (Cook, Heath, & Thompson, 2003). The LibQUAL+™ institutional analysis provided as part of the survey package reported the service adequacy gap (perceived – minimum) in 2002, 2005, and 2006, and added the superiority gap (perceived – desired) in 2005 and 2006 (ARL, 2002; ARL, 2005; ARL, 2006). This paper is concerned only with the adequacy gap, which is indicative of how well one is meeting or exceeding the user’s minimum expectations (a positive value) or not (a negative value) (ARL, 2006).

Sample and Procedures

For the 2002 survey administration, a sample of the whole (or census) was used. The target population was the entire campus community: undergraduates, graduate students, faculty, and staff. The faculty category included only full and part-time Teaching and Research faculty. The original survey period was four weeks. Due to technical difficulties, it was extended another four weeks in an attempt to improve the response rate.

In consultation with the university’s Office of Assessment, it was decided to continue the use of a sample of the whole (or census) for the 2005 and 2006 survey administrations. This allowed us to be consistent with the 2002 survey, and avoid the additional logistical complications involved in acquiring student email addresses from the Registrar’s Office. In 2005 only the undergraduate and graduate students were surveyed, followed in 2006 by the faculty and

staff. In 2006, the faculty category was broadened to include not only full and part-time Teaching and Research faculty but also full-time Administrative/Professional and Special Purpose faculty. As the faculty and students are the overwhelming majority of library users, only their responses are considered in this paper.

A two week period in February was chosen for both the 2005 and 2006 administrations. This time frame offered several advantages. It was still early enough in the semester for the potential respondents to be settled in for the new semester, relatively undistracted by the intense schedule of social events that characterized the fall semester. They were not yet fatigued by mid-term school assignments. It avoided (or reduced) survey fatigue by preceding any other surveys planned by the Office of Assessment for the same survey population. It also provided an opportunity to market the library to the entire target population via the notification and follow-up emails.

Incentives were used in all three survey administrations. In 2002, a Palm Pilot M500 was awarded. In 2005, a 40GB iPod, gift cards to the RU bookstore, and free coffee for a semester at the library coffee shop were given away. In 2006, a 60GB video iPod, two chances for dinner for two at a popular local restaurant, and free coffee for a semester at the library coffee shop were awarded.

Measures

Mean adequacy gap

For each participant group, the mean adequacy gap is the main measure of satisfaction with the Library as Place. It is the average difference or “gap” between the perceived and minimal acceptable levels of user satisfaction. A positive value indicates how much the library is exceeding the participant group’s expectation. A negative value shows that the library is failing to meet even their minimum expectations, and by how much.

Variables

Because of the changes to the LibQUAL+™ survey, not all the 2002 questions had an equivalent question in the 2005/2006 survey version. Only four of the questions from the “Library as Place” survey dimension seemed reasonably equivalent, based on their stated definition (see Table 1). Each pair of questions defined a dependent variable used in this study. Taken together, these four variables are assumed to define a common construct known as the “Library as Place”.

Table 1

Equivalent question pairs from the 2002 and 2005/2006 LibQUAL+™ surveys, and the variable defined by each pair

LibQUAL+™ survey questions		Variable
2002	2005/2006	
Q2 “Space that facilitates quiet study”	“LP-2 Quiet space for individual activities”	Quiet study
Q10 “A haven for quiet and solitude”	“LP-4 A getaway for study, learning, or research”	Haven
Q21 “A comfortable and inviting location”	“LP-3 A comfortable and inviting location”	Comfortable
Q23 “A contemplative environment”	“LP-1 Library space that inspires study and learning”	Contemplative

Metrics

Cohen’s d

One of the commonly used effect size measures of standardized mean difference is Cohen’s d (Thompson, 2006; Kline, 2005; Grissom & Kim, 2005). It “expresses the distance between the two group means in terms of their common standard deviation. For example, if $d = .40$, it means that 4/10 of a standard deviation separates the two means” (Cooper, 1998, p. 128; see also Kline, 2005; McNamara, 1994). The greater the difference, the more likely the difference is meaningful in either the positive or negative direction (McNamara, 1994; Grissom & Kim, 2005). Cohen’s d is relatively uncomplicated for a standardized statistic, making it relatively easy to both understand and communicate to non-specialists (McNamara, 1994; Springer, 2006; cf. Lipsey & Wilson, 2000).

Confidence Intervals

A sample mean serves as a point estimate of the actual population’s mean. Hence the standardized difference between two sample means, such as Cohen’s d , is an estimate of the true difference between the two population means. Being an estimate, the d statistic contains a degree of sampling error. The degree of sampling error is indicated by the confidence interval (CI) constructed around d (Kline, 2005; Wolfe & Cumming, 2004). A CI is also a measure of the accuracy of the estimate, given as a probability (traditionally 95%) (Cumming & Finch, 2005; Wolfe & Cumming, 2004; Grissom & Kim, 2005; Kline, 2005).

Binomial Effect Size Display (BESD)

BESD is not actually a measure of effect size *per se*. Instead it is designed as a way to interpret or infer the practical importance of any type and size of Pearson correlation coefficient r . Since r can be used as an effect size measure of the results of two treatments, *BESD* translates this r into an estimate of the percent success rate difference between the two treatments (Grissom & Kim, 2005). The *BESD* for a d statistic is determined by converting it to r and reading the result as a percent (Lipsey & Wilson, 2000). As a percent, the *BESD* is even easier to understand and communicate to both specialists and non-specialists than is d alone (Suskie, 1996; Lipsey & Wilson, 2000).

Change in original metric

Another way of reporting an effect size is to show how it changes (increases or decreases) the original metric (Lipsey & Wilson, 2000), such as the mean adequacy gap (AG) in this study. A positive result indicates an improvement in user satisfaction, a negative result the opposite.

Results

Response rate

The rate of response for each of the participants groups varied widely between the 2002 and 2005/2006 survey administrations (see Table 2). A large part of the discrepancy between the 2002 and the 2005/2006 response rates is due to differential survey completion rates. The 2002 administration was plagued by network difficulties and online survey design problems that resulted in low survey completion rate. In 2002 the campus computing network was not well-developed which interfered with connectivity. The LibQUAL+™ survey version for that year was several pages longer than the 2005/2006 versions. Together these difficulties led to high participant frustration with the logistics of the process, resulting in low completion rates. By 2005, the computing network had been upgraded, and the online version of the LibQUAL+™ survey shortened and redesigned. Both of these factors, coupled with an improved technological sophistication of the participants, contributed to an improved completion rate for the 2005 and 2006 survey administrations.

Table 2

Response rate for the 2002, 2005, and 2006 LibQUAL+™ surveys

Group	Population (N)	Participants (n)	Response rate
Undergraduates			
2002	8200	570	6.9%
2005	8281	1237	14.9%
Graduate Students			
2002	1042	172	16.5%
2005	825	232	28.1%
Faculty			
2002	536 ^a	192	35.8%
2006	772 ^b	162	20.9%
All Groups			
2002	9778	934	9.6%
2005/2006	9878	1631	16.5%

Note. ^a Full-time and part-time Teaching & Research faculty only. ^b Full-time and part-time Teaching & Research, Special Purpose, and Administrative/Professional faculty.

Findings

Overall the user satisfaction with the changes in the Library as Place at McConnell Library was positive ($d = 0.10$), albeit modestly so (see Table 3). During the four year period under study, the graduate students' perceptions improved the most ($d = 0.13$), followed by the undergraduates ($d = 0.10$) and the faculty ($d = 0.05$). The changes improved the overall users' satisfaction with the library as Haven the most ($d = 0.24$). The library as a Comfortable place and a destination for Quiet Study improved a small amount ($d = 0.06$ for both), while the library as a Contemplative place improved least of all ($d = 0.03$).

Examining the results by participant group reveals a somewhat different story. The undergraduate satisfaction with the library as a Haven ($d = 0.29$) increased more than that of any of the groups.

Table 3

Comparison of mean adequacy gap measures as indicators of changes satisfaction with the Library as Place between 2002 and 2006

Group	<i>d</i>	95% <i>CI</i>	<i>BESD</i>	<i>AG</i>
Undergraduates				
Contemplative	-0.03	-0.26, 0.19	-1.70%	-0.06
Comfortable	0.04	-0.06, 0.14	1.90%	0.07
Haven	0.29	0.19, 0.39	14.30%	0.61
Quiet Study	0.09	-0.13, 0.32	4.70%	0.17
All variables	0.10	-0.11, 0.31	5.10%	0.20
Graduate Students				
Contemplative	0.08	-0.12, 0.28	4.00%	0.14
Comfortable	0.11	-0.08, 0.31	5.70%	0.21
Haven	0.24	0.04, 0.44	12.10%	0.55
Quiet Study	0.07	-0.13, 0.27	3.70%	0.17
All variables	0.13	-0.01, 0.26	6.40%	0.26
Faculty				
Contemplative	-0.03	-0.26, 0.19	-1.70%	-0.06
Comfortable	0.13	-0.08, 0.35	6.60%	0.24
Haven	-0.005	-0.22, 0.21	-0.20%	-0.01
Quiet Study	0.09	-0.13, 0.32	4.70%	0.17
All variables	0.05	-0.09, 0.18	2.40%	0.09
All groups				
Contemplative	0.03	-0.10, 0.30	1.60%	0.06
Comfortable	0.06	-0.01, 0.14	3.10%	0.12
Haven	0.24	0.05, 0.44	12.10%	0.51
Quiet Study	0.06	0.03, 0.09	3.00%	0.12
All variables	0.10	-0.10, 0.30	4.90%	0.19

In contrast, the undergraduate satisfaction improved less dramatically with the library as a place for Quiet Study ($d = 0.09$) or as a Comfortable place ($d = 0.04$). They were dissatisfied with the library as a Contemplative place, as were the faculty ($d = -0.03$ for both). The faculty was only

somewhat less dissatisfied with the library as a Haven ($d = -0.005$). Paradoxically, faculty satisfaction increased the most with the library as a Comfortable place as well as one for Quiet Study ($d \geq 0.09$ for both). The perceptions of the graduate students fell somewhat in between those of the undergraduates and the faculty. On the one hand, they shared with the undergraduates a greatly increased satisfaction with the library as a Haven ($d = 0.24$). Their satisfaction with the library as a place for Quiet Study ($d = 0.07$) is less than that of the undergraduates and the faculty ($d = 0.09$ for both). The graduate student satisfaction with the library as a Comfortable place ($d = 0.11$) increased more than that of the undergraduates ($d = 0.04$) but less than that of the faculty ($d = 0.13$). Unlike either the faculty or the undergraduates ($d = -0.03$ for both), the graduate students had the highest increase in satisfaction with the library as a Contemplative place ($d = 0.08$).

Conclusion and Discussion

The LibQUAL+™ mean adequacy gap score data captured the changes in user satisfaction with the changes in the Library as Place. It will be used in future assessment of changes made to the library's physical spaces since the last 2006 LibQUAL+™ survey.

Quiet study

Since group study tends to be noisier than individual study, it was decided to provide separate group and individual study spaces. For group study spaces, six group study rooms were built on the 2nd level and the number of large tables with chairs was increased on the 3rd level. One of the two library electronic classrooms (Classroom B) is available for group study during midterms and finals, while the other (Classroom B) is available for individual quiet study. To reduce the overall noise level in the library classrooms, a “no cell phone policy” (and enforcement) was instituted, as well as improved anti-noise policy monitoring and enforcement, especially during mid-terms and finals, by the nearby reference desk personnel.

Additional changes are planned for the future. Monitoring and enforcement of 5th level quiet area will be improved. Designated individual study areas will be created in other areas of the library. A desktop computer with hard wire connectivity will be added to each group study room on level 2.

Communication and signage

Outside each library classroom, a computer monitor was placed that displays the classroom's use schedule, so students know where to go for library instruction workshops and when each classroom is available for student study use. A large flat-screen monitor was placed in

the Main Lobby, and in the reference services area where the bulk of public access computers are located. Each monitor provides an ongoing display of library news, such as the latest databases acquired, notes about staff, and library events. During inclement weather, both monitors are switched to “The Weather Channel” so users can follow the evolving weather conditions.

Stacks coffee shop/café

There are plans in process to convert an internal, open courtyard-like space in the library into a purpose built coffee shop/café. It will provide more seating (tables and chairs), and leisure space (comfortable furniture), and improved food and beverage facilities.

Future research

Several avenues of follow-up research suggest themselves. One involves determining if the changes in user satisfaction found in this study reflect a change in one or both components of the adequacy gap: the users’ perceptions or minimum expectations, or both. Another involves developing benchmark data to place our findings into a broader comparable context, both with our peers as well as in a larger state and national context.

Another possibility is the systematic analysis and integration of data from other sources. For example, the comment data from the 2002, 2005 and 2006 LibQUAL+™ surveys can be analyzed using qualitative analysis software to see if the concerns match those found in the score data. The results of locally generated surveys can be studied in conjunction with the results of this study to produce a more comprehensive user view of certain aspects of the Library as Place. For example the Circulation Department’s survey of the noise level in the 5th floor quiet area can provide additional information on how we can improve the Quiet Study quality of the area. Their survey of users’ perceptions of the utility of the large screen panel in the Main Lobby may shed light on how these devices can be more effectively used to communicate what the library has to offer its users.

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