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Utilizing LibQUAL+® to Identify Best Practices in Academic Research Library Website Design

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Abstract:

The intent of this research paper is to discover if LibQUAL+® results can be used to identify “best practices” in academic research library website design. As demonstrated by responses to the LibQUAL+® survey item “A library Web site enabling me to locate information on my own”, website design is an important consideration for academic research library users. This paper examines websites from members of the Association of Research Libraries (ARL) who participated in LibQUAL+® in 2010, with a particular focus on the websites with the highest scores for this specific LibQUAL+® question. Three primary functional criteria – Visual Layout, Information Architecture and Content – were used to evaluate if the academic research library websites with the highest LibQUAL+® scores in 2010 provided insight into best practices for contemporary academic research library website design.

Background:

LibQUAL+® was developed with the intent of assessing user perceptions of service quality. The long-standing goals of LibQUAL+® are to:

- Foster a culture of excellence in providing library service
- Help libraries better understand user perceptions of library service quality
- Collect and interpret library user feedback systematically over time
- Provide libraries with comparable assessment information from peer institutions
- **Identify best practices in library service** (*emphasis added*)
- Enhance library staff members' analytical skills for interpreting and acting on data

(Association of Research Libraries, *What is LibQUAL+®?*, 2011)

Very little research to date has addressed the use of LibQUAL+® to “identify best practices in library service.” Despite the voluminous literature about the survey, there are very few references to the achievement of this LibQUAL+® goal. One exception is a 2004 article which points out that “by relying on peer information, LibQUAL+® data leads eventually to an understanding of best practices” (Shedlock and Walton, 2004).

There is also anecdotal evidence that many libraries make use of peer comparisons for internal management purposes. However, there appears to be an absence of studies that have applied a methodology for utilizing LibQUAL+® to identify best practices. Hence, the purpose of this research was to empirically explore and achieve a key LibQUAL+® goal, by investigating if an appropriate benchmarking methodology might be applied to evaluate a relatively homogeneous sample of academic research libraries to profile potential institutional best practices.

Typically, a best practice is defined as “a method or technique that has consistently shown results superior to those achieved with other means, and that is used as a benchmark.” (WebFinance, Inc., 2011). Benchmarking practices are well described in the business literature. Camp, for example, describes the benchmarking process as a set of ten steps across five phases. In the Planning phase of benchmarking, which has been undertaken in this study, the process involves identifying what is to be benchmarked, identifying comparative companies, determining data collection method and collecting data. The other benchmarking phases include Analysis, Integration, Action, and Maturity. (Camp, 1989)

One of the cautions about benchmarking is that differences in institutions, performance expectations and other considerations must be acknowledged. APQC, the American Productivity & Quality Center, in its *Glossary of Benchmarking Terms* defines best practice with the caveat that “[T]here is no single ‘best practice’ because best is not best for everyone. Every organization is different in some way -- different missions, cultures, environments, and technologies. What is meant by ‘best’ are those practices that have been shown to produce superior results; selected by a systematic process; and judged as exemplary, good, or successfully demonstrated. Best practices are then adapted to fit a particular organization.” (APQC, 2008)

This caution about benchmarking has been extended to LibQUAL+® and may explain the reluctance to use the survey data for the identification of best practices. It has been noted that certain unique types of institutions tend to achieve among the highest LibQUAL+® performance scores. For example, six professional military education libraries that administered the survey in 2003 found that “military respondents did not perceive that service levels were less than minimally acceptable in any dimension...respondents gave the highest scores for perceived levels of service in all four dimensions, resulting in the largest positive adequacy gap in all dimensions for all institutional groups...[and] for all questions in the Affect of Service dimension Military Institution scores resulted in a superiority gap—meaning that service quality was perceived to be even higher than desired”. The authors of this report “discussed possible explanations of the positive perceptions of library service within the [military education] institutions, including homogeneity of the user population, self-identification with the library, the small school environment” and more. (Nicula and Laseter, 2004)

As this example demonstrates, utilizing LibQUAL+® for benchmarking must be approached with the appropriate cautions in mind, since there are differences among the populations of users who complete the survey and the institutions that administer it. Since LibQUAL+® has been implemented by more than 1,000 libraries in more than 20 countries and 20 languages during the past decade, an early design consideration for the present research involved selecting a subset of libraries to include in the study. The sample of libraries selected included the 30 ARL libraries that participated in LibQUAL+® in 2010. This sample, which excluded the health science and law library respondents, represents a largely homogeneous group of North American academic research libraries. These research libraries typically provide services to relatively similar groups of users, including undergraduate students who major in a variety of academic

subjects, graduate students who study in many different disciplines as well as faculty who are engaged in research and teaching.

While any number of LibQUAL+® survey items could have been considered for a best practices study, LibQUAL+® results indicate that the research library's website is among the most important issues to academic audiences. A study of library users' service desires by Thompson, Kyrillidou, and Cook found that "A library Web site enabling me to locate information on my own" was rated among the top five desired library service items across all user groups (faculty, graduate students, undergraduates) in three successive years, 2004 – 2006. (Thompson, Kyrillidou, and Cook, 2008) Additionally, since the LibQUAL+® survey instrument began utilizing 22 core items in 2004, the website survey item has consistently ranked among the top three desired service items for all respondents from ARL universities. In 2010 and the first half of 2011, this item even surpassed the much discussed "Print and/or electronic journal collections I require for my work" within the ARL university library population included in this study. LibQUAL+® data also reveal that since 2008, ARL library performance on this website survey item is least superior (according to the superiority mean) among all items, except for the item on "library space that inspires study and learning". (Association of Research Libraries, LibQUAL+® Data Repository, 2008-2010)

There is considerable literature on recommendations for website design. Lynch and Horton's *Web Style Guide: Basic Design Principles for Creating Web Sites* is particularly useful in outlining the primary elements of design, such as universal usability, information architecture, interface design, page structure and design, typography, graphics, and media. Jakob Nielsen, who's been called the "king of usability" and "the world's leading expert on user-friendly design", suggested 113 guidelines for homepage design. Some of Nielsen's points include:

- Emphasize the highest priority tasks so that users have a clear starting point on the homepage
- Group items in the navigation area so similar items are next to each other
- Categories need to be immediately differentiable from each other – if users don't understand your terminology, it will be impossible for them to differentiate categories

(Nielsen, 2001)

A number of researchers have developed instruments to assess user perceptions of website quality. For example, Aljukhadar and Senecal's scale considers attributes from a user's point of view including such features as visual attractiveness, ease of use, and site information. One theoretical approach to a website design study proposed a two factor model. For instance, the authors suggest that the presence of "hygiene" factors make a website functional and serviceable and their absence causes user dissatisfaction (with features such as attractive screen background and pattern and logical structure of information presentation), whereas "motivation" factors add value to the website by contributing to user satisfaction (with features such as presence of eye-catching images on the homepage and attractive overall color use). (Zhang and von Dran, 2000)

Methodology:

This study utilizing LibQUAL+® to identify best practices selected the 30 ARL libraries that administered the survey in 2010 and the respective websites for these libraries. Limiting the sample to these participants permitted analysis of both the LibQUAL+® scores and the websites on which the scores were based in a relatively current timeframe. This approach minimized deviations in the libraries' websites, respondents' minimum or desired expectations, or perceived scores over time.

To focus the current study on best practices, the LibQUAL+® data was used to rank the ARL libraries with the best results in terms of the website's ability to allow the user to locate information independently, using the superiority mean score. Even among the small sample of 30 academic research libraries, perceptions on how well the libraries' websites enabled respondents to locate information on their own varied considerably, with service superiority mean scores ranging from -0.64 to -1.85. The authors then looked at the websites from the five libraries with the highest service superiority gap scores (ranging from -1.40 to -1.85) as well as the websites of the five libraries with the lowest service superiority gap scores (ranging from -0.64 to -0.94). Only the home page for each of the libraries was examined in-depth. The authors were unaware of the LibQUAL+® score associated with the home page that they were viewing at any given time during the data collection session.

The authors scored each of the ten ARL library websites based on criteria suggested by one of authors of this study, Dr. Carolyn Lin, a former Head of the Communications Department at the University of Connecticut, the 24th most productive advertising researcher (2008), a recipient of a University Distinguished Research Faculty award for work in new media technologies and the founder of the Communication Technology Division at the Association for Education in Journalism and Mass Communication. Three major functional criteria of Visual Layout, Information Architecture and Content were examined; each of these criteria included several defining attributes as noted below:

1. Visual Layout

- (a) Color – is there a primary color and a limited number of accent colors
- (b) Space – is white space minimized and do your eyes move without cognitive overload barriers?
- (c) Focal point – where does one look first?
- (d) Layout – where are the highest priority tasks located?

2. Information Architecture

- (a) Information Location – related to the site's purpose, is important information in the right place?
- (b) Content Categories – are the key content categories emphasized? Can you get to important information in two clicks?
- (c) Labels and Titles – are they intuitively and effectively presented?
- (d) Functionality – is the site easy to use, interactive, and understandable?

3. Content

- (a) Clarity - has jargon been eliminated?
- (b) Instructions – are they needed? Are there any missing?
- (c) Writing Quality – is it clear, concise, and straight-forward?
- (d) Readability – did the designer(s) think and comprehend like a user?

Findings:

The analysis of the websites revealed that libraries with higher superiority mean scores on the LibQUAL+® item – “a library Web site enabling me to locate information on my own” – satisfied more of the criteria for effective website design than did the lower scoring libraries. Three separate summary tables of this analysis for each of the three functional criteria are show below.

Table 1: Visual Layout

Visual Layout	5 Highest Scoring Websites	5 Lowest Scoring Websites
Color	Used a limited number of colors	Three of the five used multiple colors
Space	All five had minimal white space	All five had too much white space. Some exhibited display problems on a normal workstation and one had to scroll down to see the whole page
Focal Point	Eyes were drawn to the search box	Issues in four of five cases, including eyes being drawn to a decorative image, to multiple search boxes and/or to search box competing with a graphic
Layout	Search box was prominent on all five sites	Several had distractions such as too large a central image or unnecessary graphics

Table 2: Information Architecture

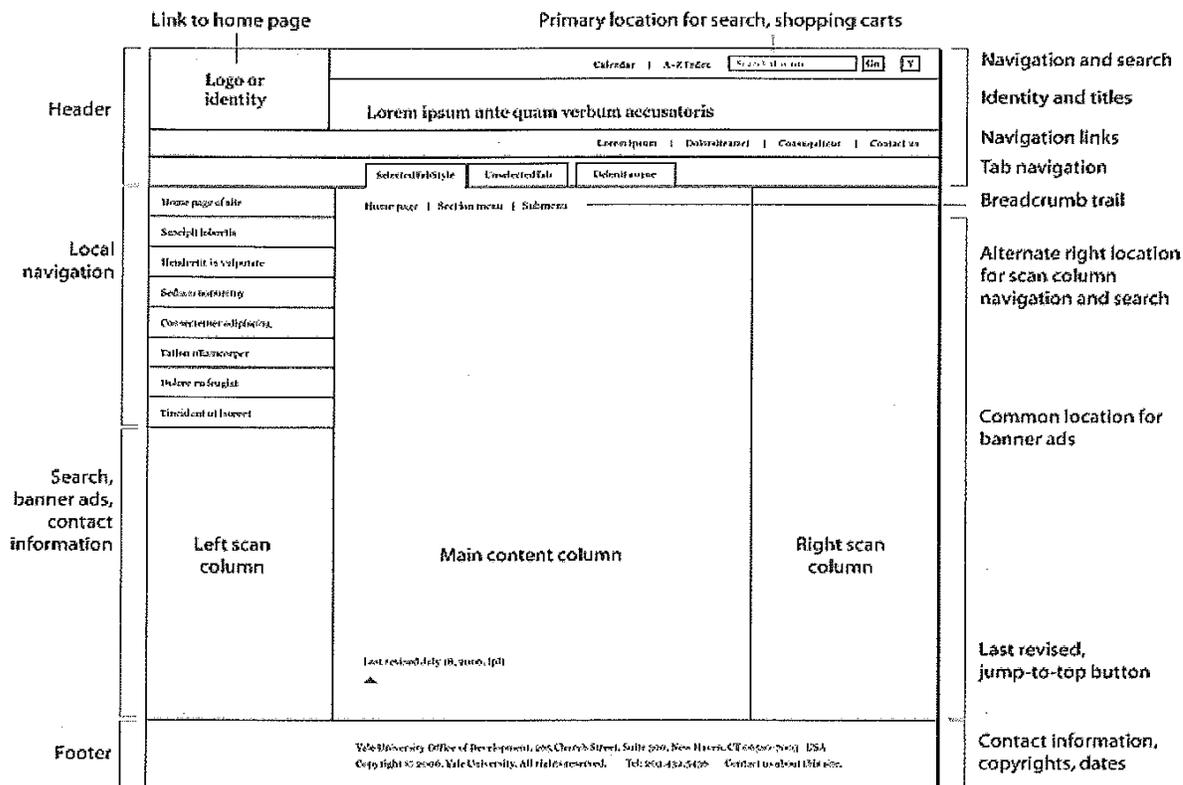
Information Architecture	5 Highest Scoring Websites	5 Lowest Scoring Websites
Information Location	Search box well situated and fairly easy to use	Search box was complicated on three of the five websites
Content Categories	Discovery was emphasized, primary content was emphasized with secondary content off to the side	Various issues identified, such as secondary functions in prime locations, images that distracted from the sites' discovery and service functions, and tabs stacked on top of each other
Labels and Titles	Intuitive and effective on all five sites	Some labels used inconsistently; others missing or don't visually stand out
Functionality	Good on all five sites	Generally okay, with one site having vocabulary issues

Table 3: Content

Content	5 Highest Scoring Websites	5 Lowest Scoring Websites
Clarity	Four did not use jargon; one used WorldCat and ILLiad references	All five used jargon
Instructions	Instructions not typically needed	Tended to have too many instructions; some were wordy and difficult to follow
Writing Quality	Generally concise, one was wordy, one not straightforward	Three were not concise; two were not straightforward
Readability	Generally reflected web designers thinking like a user, were readable and easy to comprehend	Various issues such as difficult for undergraduates to understand, designers didn't think like a user, or made it too laborious for users to comprehend

During the review of the ten websites, the authors also considered a relatively standard template for text-oriented informational websites that has emerged in recent years as outlined in the work of Lynch and Horton. This template contains design features that can facilitate user efficacy to locate information on their own and quickly focus on the content they are seeking from the website as they become acclimated to the web interface design. One example of this concept is illustrated in the following table:

Table 4: A Canonical Webpage Layout



(Lynch and Horton, 2009)

Lynch and Horton underscore that the header on a website page is where users expect to find the organizational identity and, if it is not the homepage, a link back to it should be provided. On an informational website, the header also commonly provides a site search capability and navigation links to related web pages, organized horizontally as tabs. Beneath the header, informational websites are typically organized into three columns: (1) Left scan (2) Main content and (3) Right scan. Lynch and Horton point out that the main content for the page should be placed in the center column. For an academic research library webpage, the main content column should feature the primary search box for searching library content and should highlight the primary library services offered. The services to feature in the main content column can be determined by reviewing webpage analytics that indicate which links to library services are used most frequently. Left scan columns are commonly used for navigation links

that allow users to explore other useful information relevant to their library interests. Right scan columns, because they have come to be associated with advertising, can be effectively used to publicize news, events and new library services.

Applying the findings from the review of the ten ARL websites, in combination with the elements of effective website design identified by Dr. Lin and the interface design conventions cited by Lynch and Horton, the authors constructed a prototype homepage that might reflect a “best practice” in contemporary academic research library website design shown in Table 5.

Table 5: A Prototype of a “Best Practice” in Academic Research Library Website Design

The screenshot displays a prototype website for a University Library. At the top, there is a search bar labeled "Search Library Website" with a magnifying glass icon. Below this is a horizontal navigation menu with the following items: University Home, University Press, Institutional Repository, Information Commons Partners, Contact Us, and User Comments. The main content area is organized into several columns and sections. On the left, there is a "About the Libraries" section with a list of links: Campus Libraries (Main Library, Engineering, West Campus, Middle-East Campus), Professional School Libraries (Business Library, Law Library, Medicine Library), Staff Directory, Library Employment, Library Locations and Directions, Friends of the Libraries, and Exhibits. Below this is a "Library Hours" section with links for Main Library Hours and Other Library Hours. The center of the page features a large image of a student reading in a library, with a search bar below it containing the text "Find books, articles, DVDs, and more" and a "Search" button. Above the search bar are tabs for "Books", "Articles", "Audio / Video", and "Everything". Below the search bar is a link for "UI Catalog Search". To the right of the search area is a "Library Services" section with three columns: "Library Services" (Interlibrary Loan, Circulation/Desk, Course Reserves, Video Theater Booking, Technology Assistance), "Research Assistance" (By Subject, Contact Subject Specialists, Library Resource Guides, Citation Management/Style Guides, Research Collections), and "User Information" (Undergraduates, Graduate Students, Faculty, Visitors, Persons with Disabilities). Further right is an "ask a librarian" chat service with a question mark icon and options for chat, text, email, phone, and in person. Below that is a "Library News" section with an RSS icon and a "Color Scanner" advertisement. The advertisement describes the scanner's features, such as scanning up to 11"x 17", creating various file formats, and scanning to email or USB. A "More" button is located at the bottom right of the scanner advertisement.

Conclusions:

This research embraced an original goal of LibQUAL+® to “identify best practices in library service” via a systematic procedure to utilize the survey data. As reflected by LibQUAL+® scores, website design is an important consideration for academic research library users. The findings of this study demonstrate that, using LibQUAL+® 2010 scores as one gauge, there are common characteristics among those ARL library websites with the highest scores on the item “a library Web site enabling me to locate information on my own.” Applying a set of sound evaluation criteria commonly used to assess the effectiveness of website design, as demonstrated in this study, may give other ARL libraries insight into best practices for contemporary academic library website design. This research may inspire libraries serving other missions and communities (e.g., law libraries, health sciences libraries, and community college libraries) to use a similar methodology to discover and adopt best practices in website design to better serve their users in this digital library era.

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