Evidence Based Library and Information Practice

Conference Paper

Coding Practices for LibQUAL+® Open-Ended Comments

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Abstract

Objective – This paper presents the results of a study of libraries' practices for coding open-ended comments collected through LibQUAL+® surveys and suggests practical steps for facilitating this qualitative analysis.

Methods – In the fall of 2009, survey invitations were sent to contacts at 641 institutions that had participated in the LibQUAL+® survey from 2003 to 2009. Of those invited, there were 154 respondents, for an overall response rate of 24.0%.

Results – Nearly 87% of the respondents indicated that their library had performed a qualitative analysis of the comments from their most recent LibQUAL+® survey. Of these, over 65% used computer software to organize, code, sort, or analyze their comments, while 33.6% hand-coded their comments on paper. Of the 76 respondents who provided information on software, 73.7% used Excel, 18.4% used Atlas.ti, and 7.9% used NVivo. Most institutions (55.8%) had only 1 person coding the comments; 26.9% had 2 coders, and very few had 3 or more. Of those who performed some type of analysis on their comments, nearly all (91.9%) indicated that they developed keywords and topics from reading through the comments (emergent keywords). Another common approach was to code the comments according to the LibQUAL+® dimensions; 55.0% of respondents used this strategy. Nearly all of the institutions (92.7%) reported using their LibQUAL+® comments internally to improve library operations. Libraries also typically incorporated the comments into local university reports (75.5%) and used the comments in outreach communications to the university community (60.9%).

Conclusion – Comments obtained from the LibQUAL+® survey can be useful for strategic planning, understanding users, identifying areas for improvement, and prioritizing needs. A key suggestion raised by respondents to this survey was for practitioners to consider sharing the fruits of their labor more widely, including coding taxonomies and strategies, as well as broader discussion of qualitative analysis methods and practices.

Introduction

Since its launch in 2000, LibQUAL+® has become the most prevalent library assessment instrument for measuring service quality.

> LibQUAL+® has been used to collect service quality assessment perceptions from 1,294,674 participants at 1,164 institutions around the world. LibQUAL+® has been implemented in 28 language variations: Afrikaans, Chinese, Danish, Dutch, English (American, British, Dutch, Finnish, France, Norwegian, Swedish, Swiss), Finnish, French (British English-BE, Belge, Canada, France, Swiss), German (and German Swiss), Greek, Hebrew, Japanese, Norwegian, Spanish, Swedish (and Swedish BE), and Welsh (Kyrillidou, Thompson, & Cook, 2011, p. 3).

A key component of the LibQUAL+® survey data is the file of respondents' free-text comments that accompanies the quantitative data – almost 40% of LibQUAL+® respondents typically include narrative comments (Green & Kyrillidou, 2010, p. 26).

> "[T]he open-ended comments gathered as part of LibQUAL+® are themselves useful in fleshing out insights into perceived library service quality. Respondents often use the comments box on the survey to make constructive suggestions on specific ways to address their concerns" (Cook et al., 2008, p. 14).

Thus, systematic analysis of a library's qualitative data from LibQUAL+® can be extremely valuable in assessing the library's performance and identifying areas for improvement.

To better understand libraries' current practices in analyzing and using LibQUAL+® comments, the authors conducted a survey of all U.S. and Canadian libraries that administered at least one LibQUAL+® survey from 2003 through June 2009. Survey questions asked respondents to describe what they did with the open-ended comments received from their LibQUAL+® survey and probed aspects including coding methods, local resources for coding, and the use of comments for various purposes. This paper presents the survey findings as well as suggestions for practical steps to help facilitate qualitative analysis of LibQUAL+® comments. The questionnaire can be found at http://www.library.okstate.edu/dean/neurohr/CodingSurvey10-26-09.pdf.

Literature Review/Bibliography

A search of the published, peer-reviewed library literature found 12 articles and conference papers produced by 11 academic libraries: Bowling Green State University (Haricombe & Boettcher, 2004); Northeastern University (Habich, 2009); Notre Dame (Jones & Kayongo, 2009); Texas A&M (Guidry, 2002; Clark, 2007); University of Arizona (Begay, Lee, Martin, & Ray, 2004); University of British Columbia (Friesen, 2009); University of Idaho (Jankowska, Hertel, & Young, 2006); University of Massachusetts-Amherst (Fretwell, 2009); University of Pittsburgh (Knapp, 2004); Vanderbilt University (Wilson, 2004); Western Michigan University (Dennis & Bower, 2008). These articles covered LibQUAL+® surveys administered during the period from 2001 to 2007 and for the most part described the methodologies, experiences, and findings of individual libraries that performed some type of systematic analysis of their survey's comments.

All 1 institutions represented in the literature review were doctorate-granting universities. Seven of these 11 libraries were members of ARL (Begay et al., 2004; Guidry, 2002; Clark, 2007; Jones & Kayongo, 2009; Fretwell, 2009; Friesen, 2009; Knapp, 2004; Wilson, 2004). Ten of the 11 institutions are located in the United States: 3 in the Northeast, 3 in the South, 2 in the Midwest, and 2 in the West, while the eleventh institution is located in Canada.

The amount of detail reported in the literature review by libraries about the management of their coding projects was relatively sparse and inconsistent. Only 3 of the 11 libraries represented in the literature review reported any project structure, all of which were ad hoc or informal (Begay et al., 2004; Habich, 2009; Jankowska et al., 2006). Three of the libraries reported the number of coders they used: one reported using one coder (Habich, 2009), and two reported using two coders (Dennis & Bower, 2008; Jones & Kayongo, 2009). Two non-librarians were involved in the coding (Dennis & Bower, 2008; Guidry, 2002). Only one of the libraries reported providing formal training for their coders by way of a consultant (Begay et al., 2004) while another library's coder was self-taught (Habich, 2009). The remaining nine libraries did not provide any information on coder training.

All 11 of these libraries reported performing qualitative analysis on either all or a representative sample of the comments they received from the LibQUAL+® surveys they conducted, which was part of the criteria for selecting these 11 articles. The average number of comments received by these 11 libraries was 1,031. Seven of the 12 authors reported using computer software to help in the analysis (Begay et al., Dennis & Bower, 2008; Friesen, 2009; Guidry, 2002; Habich, 2009; Haricombe & Boettcher, 2004; Jones & Kayongo, 2009) while 5 did not report what coding method (by computer or by hand) they used (Clark, 2007; Fretwell, 2009; Jankowska et al., 2006; Knapp, 2004; Wilson, 2004). Of the seven libraries that reported using software, three used ATLAS.ti (Dennis & Bower, 2008; Friesen, 2009; Guidry, 2002), two used Excel (Habich, 2009; Jones & Kayongo, 2009), one used NUD*IST – now called NVivo – (Begay et al., 2004), and one used Access (Haricombe & Boettcher, 2004).

The 11 libraries covered in the literature review varied in the way they developed a coding system for use in the analysis of their LibQUAL+® comment data. Five of the 11 reported basing their codes on the 3 LibQUAL+® dimensions Affect of Service, Information Control, and Library as Place (Friesen, 2009; Habich, 2009; Jankowska et al., 2006; Jones & Kayongo, 2009; Wilson, 2004). Three of the 11 libraries also based their coding on the individual LibQUAL+® and/or local questions (Friesen, 2009; Habich, 2009; Jones & Kayongo, 2009). Three of the libraries reported using a predetermined set of concepts or keywords (Begay et al., 2004; Haricombe & Boettcher, 2004; Jones & Kayongo, 2009), while nine reported using keywords and concepts developed from the content of the comments (Begay et al., 2004; Clark, 2007; Dennis & Bower, 2008; Fretwell, 2009; Friesen, 2009; Guidry, 2002; Habich, 2009; Haricombe & Boettcher, 2004; Jankowska et al., 2006). Nine of the 11 libraries reported coding the distinct topics found within each comment in lieu of using 1 code for the entire comment (Begay et al., 2004; Dennis & Bower, 2008; Fretwell, 2009; Friesen, 2009; Guidry, 2002; Habich, 2009; Haricombe & Boettcher, 2004; Jones & Kayongo, 2009; Wilson, 2004). Seven of the libraries also coded a comment "positive" or "negative" if it expressed such an experience with an aspect of the library (Begay et al., 2004; Dennis & Bower, 2008; Fretwell, 2009; Friesen, 2009; Guidry, 2002; Habich, 2009; Wilson, 2004). Note that the use of each of the elements discussed above was not exclusive. Each of these libraries reported using a different combination in developing their coding system. Only one did not include any report of the elements it used to create its coding schema (Knapp, 2004).

Only 2 of the 11 libraries reported any detailed information about the steps they took to encourage or enforce coding consistency and reduce coding subjectivity during their projects. Both reported that their coders worked using an understanding gained through prior discussion of how to apply the codes (Begay et al., 2004; Jones & Kayongo, 2009), but only one had their coders work independently on randomly assigned sets of comments (Begay et al., 2004). None of these libraries reported documenting their coding procedures.

All 11 of the libraries also reported using the results to communicate with other professionals in the field (Begay et al., 2004; Clark, 2007; Dennis & Bower, 2008; Fretwell, 2009; Friesen, 2009; Guidry, 2002; Habich, 2009; Haricombe & Boettcher, 2004; Jankowska et al., 2006; Jones & Kayongo, 2009; Knapp, 2004; Wilson, 2004). Few of the 11 libraries reported any further plans to use the results of their qualitative analysis. One library reported plans to incorporate some of their findings into their annual reports and other intra-university administrative reports (Dennis & Bower, 2008). Only three planned to include the findings in outreach communications to their university (Dennis & Bower, 2008; Habich, 2009; Haricombe & Boettcher, 2004) or to external groups (e.g., donors or potential donors; Habich, 2009).

The libraries represented in the literature review reported several benefits from analyzing their comment data. Two of the libraries gained a better understanding of library users' needs and priorities (Jones & Kayongo, 2009; Fretwell, 2009). One found a new source of ideas for new services (Begay, 2004). Three libraries found a new source for improving existing services (Clark, 2007; Friesen, 2009; Wilson, 2004). One found a new source for maximizing the impact of limited resources (Habich, 2009). Three of the 11 libraries reported that they had developed a new tool for analyzing other data sets (Begay et al., 2004; Dennis & Bower, 2008; Jankowska et al., 2006). Two discovered that the findings from analyzing the LibQUAL+® comment data complemented and enhanced the findings from the quantitative data (Dennis & Bower, 2008; Jones & Kayongo, 2009).

Only one of these libraries indicated the nature of the biggest challenge they encountered during the project, which was devising a method for comment analysis that did not require learning a new software program (Habich, 2009). None of

the libraries represented reported on what support from their institutions, vendors, or others they wished they had during the project. Only one mentioned a resource they found helpful: the survey research expertise available in their university's Office of Institutional Research (Habich, 2009).

Methodology

LibQUAL+® quantitative measures have been thoroughly investigated and validated, but what about the qualitative data? Each survey includes an open-ended statement: "Please enter any comments about library services in the box below." How do libraries analyze and use the data received in response to this statement?

In the fall of 2008, a small working group began to study this question. The study was initially informed by feedback obtained by one of the authors new to LibQUAL+® who queried the LibQUAL-L discussion list in February 2008 by asking, "Can anyone share information about how they coded the open-ended comments from the LibQUAL+® survey?" The wide variety in the responses received led to the ad hoc formation of a luncheon affinity group to discuss coding at the 2008 Library Assessment Conference in Seattle. Over 15 librarians participated in the affinity group and there was much interest in coding methodologies and practices. Next, the authors met to discuss ways to explore coding, drafted a survey and planned for the survey's distribution.

In September 2009, the survey questionnaire was piloted to a small group of 30 colleagues who had responded to the listserv query or participated in the affinity group. They assisted the authors in clarifying the wording and structure of the questionnaire by answering these questions about the draft:

1. How long did it take to complete the survey? (The goal was 10 minutes or less.)
2. Can you answer the questions quickly/easily?
3. Are the questions clear? Which are not? Do you have suggestions for clarification?
4. Are the questions generic enough to cover most possible situations at your institution or others you are familiar with?
5. Other comments.

The Association of Research Libraries (ARL) provided generous assistance by emailing survey invitations to all of the contacts at North American institutions that participated in the LibQUAL+® survey from 2003 through spring 2009. There were 641 institutions: 110 ARL members (84 from the United States and 16 from Canada) and 531 non-members (515 in the United States and 28 in Canada). The first invitation was sent on October 27, 2009, followed by four reminders at one-week intervals. Of those invited, there were 154 respondents for an overall response rate of 24.0%.

Survey Results

The survey asked what kind of institution the respondent was affiliated with by using the Carnegie classifications for higher education. Of the 151 responses to this question, 9.3% were from baccalaureate colleges, 36.4% from master's colleges and universities, and 54.3% were from doctorate-granting universities (see Figure 1). There were no responses from other types of institutions.

ARL members comprised 35.1% of the respondents to the survey (Figure 2). ARL members were over-represented in the response, since only 17.2% of the 641 libraries in the sample were ARL members.

A large majority of the 154 respondents (85.1%) were from the United States with the remaining libraries from Canada (Figure 3). Nonetheless, Canadian libraries were over-represented in the response, at 14.9%; only 9.4% of the 641 libraries in the sample were Canadian.

A little more than 33% of the U.S. respondents were from the Northeast section of the country,

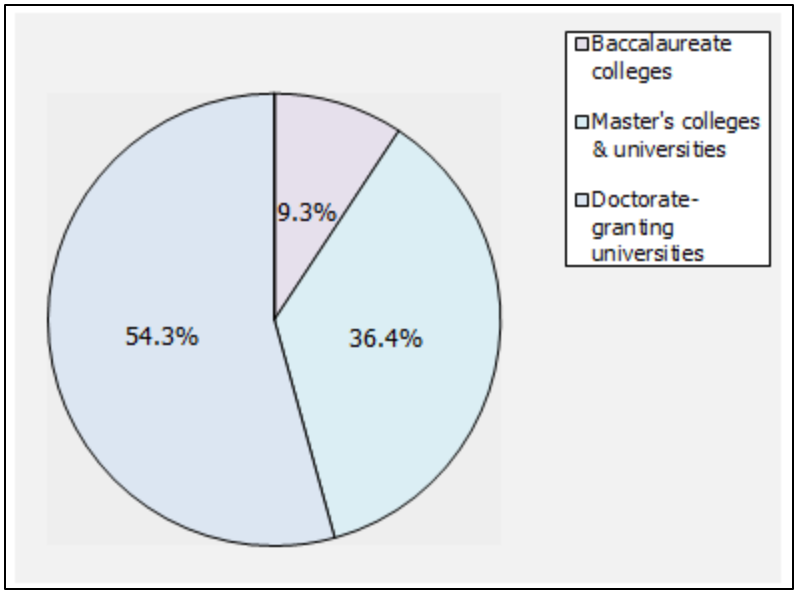

Figure 1
What is your institution type?

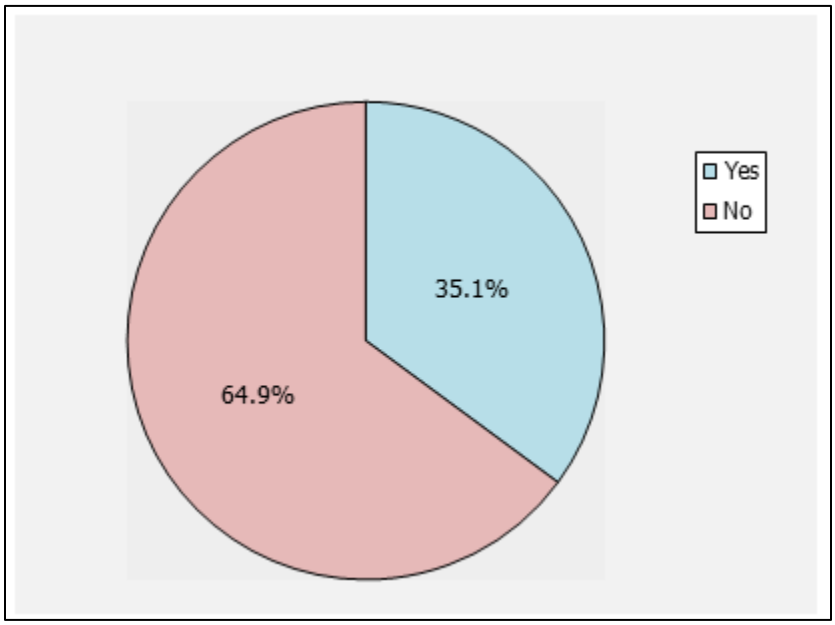

Figure 2
Does your library belong to the Association of Research Libraries (ARL)?

closely followed by the South and Midwest. Only 11.5% were from the Western states (Figure 4). For 60.2% of respondents, administration of the LibQUAL+® survey was handled by a formal or standing group within the library. or by someone whose position included survey administration. Thus, among these respondents, there appeared to be some permanent responsibility in their library for assessment (Figure 5). Nearly 40% implemented LibQUAL+® through an informal or ad hoc team or project group.

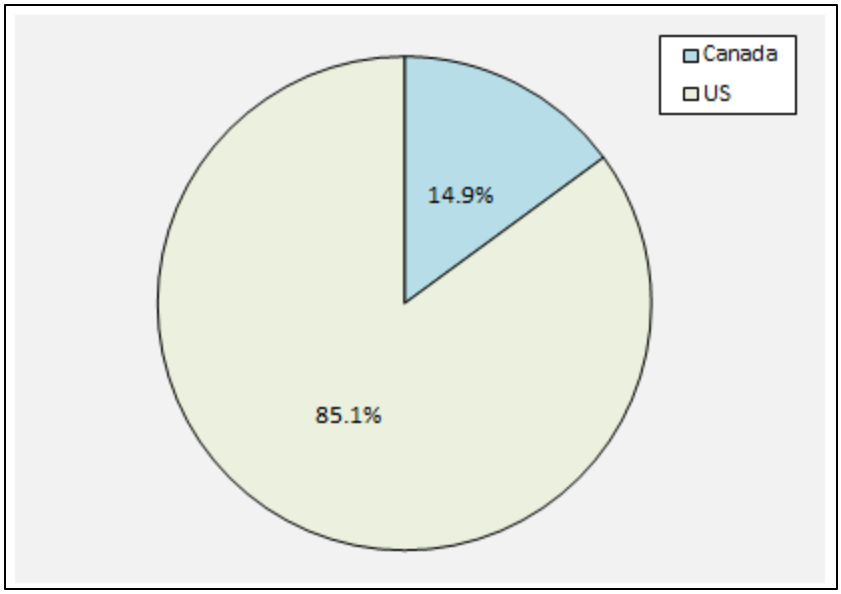

Figure 3
Country

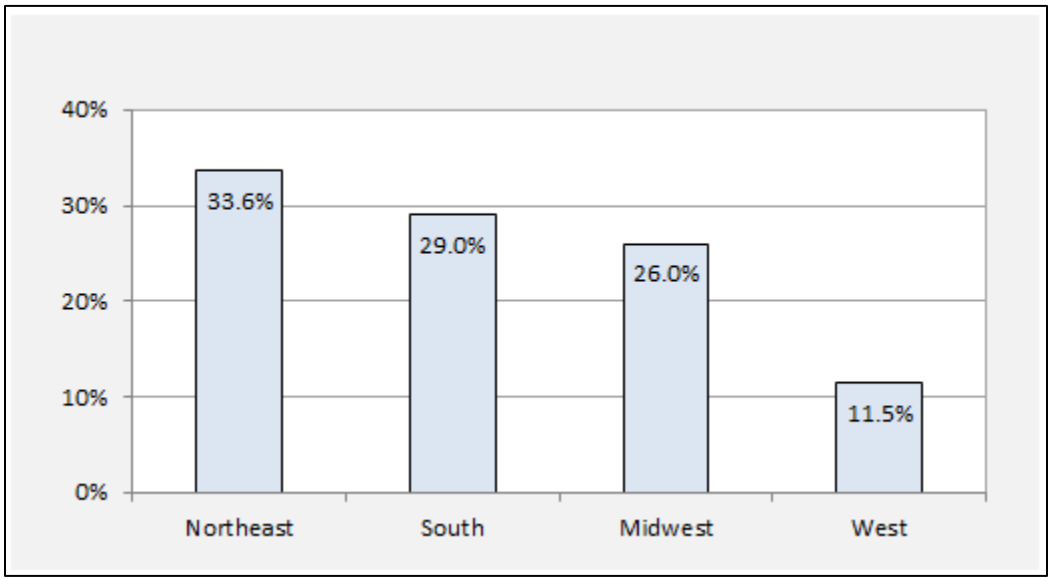

Figure 4
Sections of the United States

Nearly 87% of the respondents indicated that their library had performed a qualitative analysis of the comments from their most recent LibQUAL+® survey (Figure 6), where "qualitative analysis" was described as any process that organized or categorized or tagged/coded the free-text comments so that they might be used by library staff or others in assessing and/or improving library services. Of those who did not perform analysis on their survey comments, the most frequently mentioned reason was lack of staff time. The average number of LibQUAL+® comments received by responding libraries was

379. The median was 293 but the number of comments ranged from one to 1,420.

The survey asked those who had performed a qualitative analysis of their comments about the tools and methods they used in their approach. Of the 114 responding libraries that provided answers, over 65% used some sort of computer software to organize, code, sort, or analyze their comments, while 33.6% hand coded their comments on paper (Figure 7).

The survey revealed that coders primarily used Excel to analyze the comments: of the 76 respondents that provided information on software, 73.7% used Excel (Figure 8). ATLAS.ti was the most common qualitative data analysis software used (18.4% for ATLAS.ti versus 7.9% for NVivo).

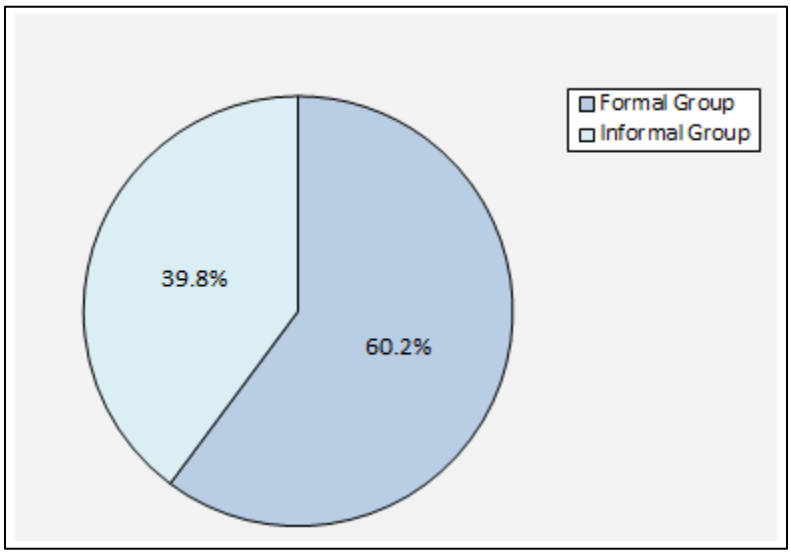

Figure 5
LibQUAL+® administrators

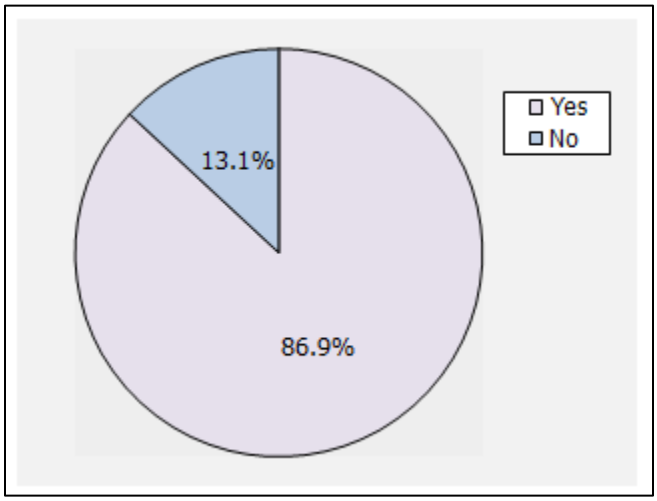

Figure 6
Did you perform qualitative analysis of the open-ended comments?

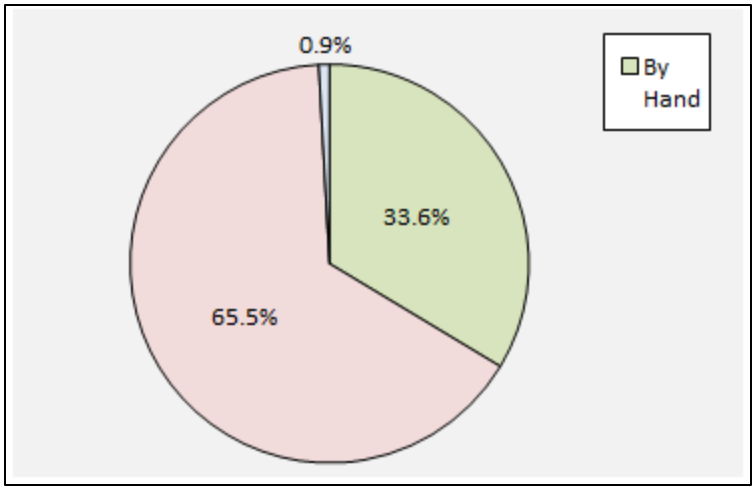

Figure 7
Coding methods

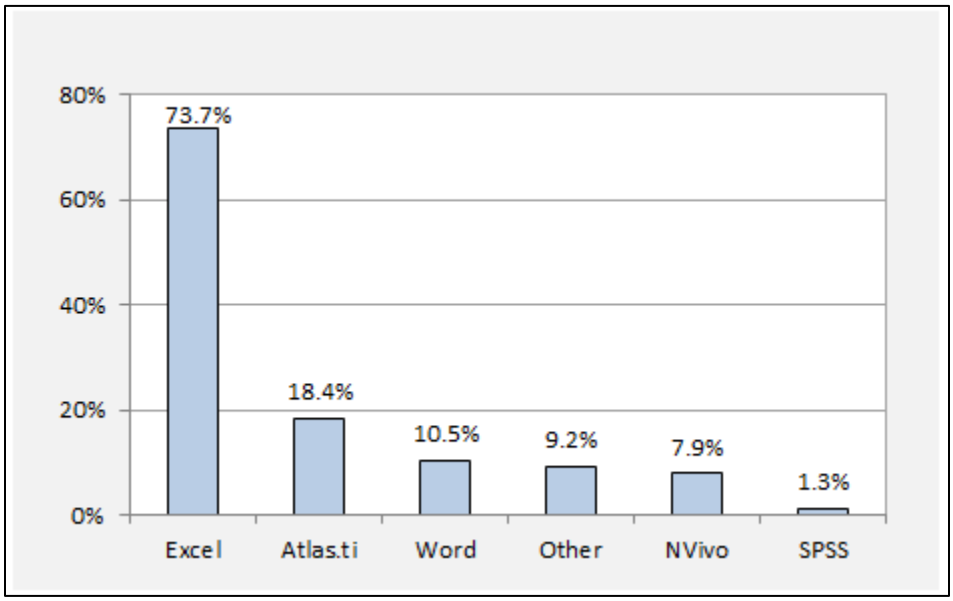

Figure 8
Software used (respondents could choose more than one option)

Most respondents (58 out of 104 libraries, or 55.8%) had only 1 person coding the comments (Figure 9). Twenty-eight (26.9%) had 2 coders, but very few had 3 or more. Thus, at over 80% of the responding libraries, either 1 or 2 people performed the coding. Only 18 libraries (17.3%) had 3 or more people who did coding.

Staff who performed the coding at respondents' libraries were typically professional librarians: 84.2% of respondents indicated that librarians were coders while 25.4% used non-librarian staff (Figure 10).

Training for coders came from several venues, primarily LibQUAL+® workshops run by ARL

(69.6%), but there was also a large contingent that was self-taught or who had taken formal courses in assessment methods (Figure 11). "Other" tended to be consultants from other areas of the local institution.

Respondents used a number of approaches to code the comments (Table 1). Of those who performed some type of analysis on their comments, nearly all (91.9%) indicated that they developed keywords and topics from reading through the comments (emergent keywords). Another common approach was to code the comments according to LibQUAL+® dimensions (55.0% of respondents used this strategy). Less common was coding according to the 22

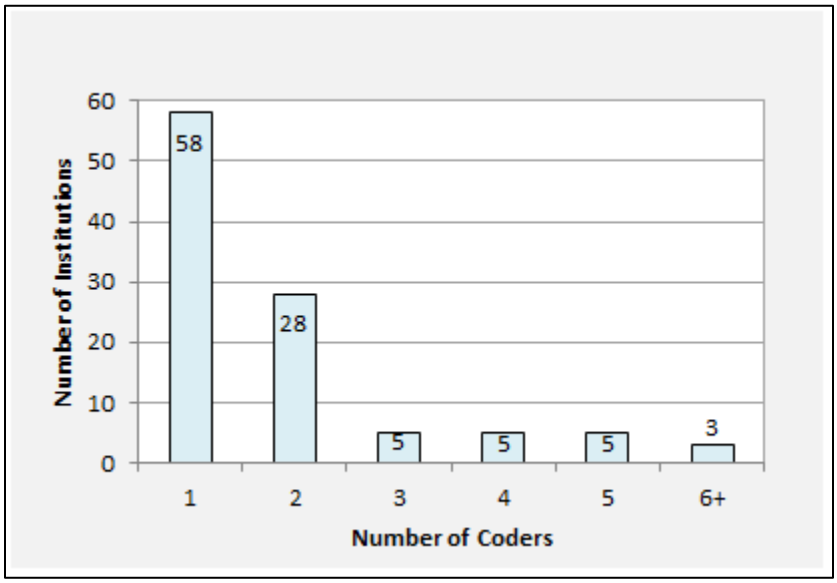

Figure 9
Number of institutions with *n* coders

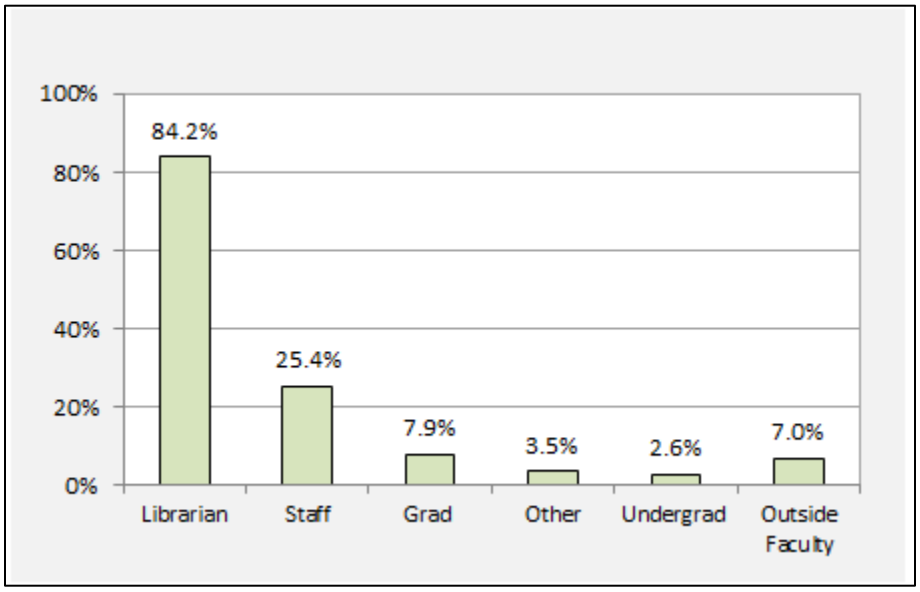

Figure 10
Coder status (respondents could choose more than one option)

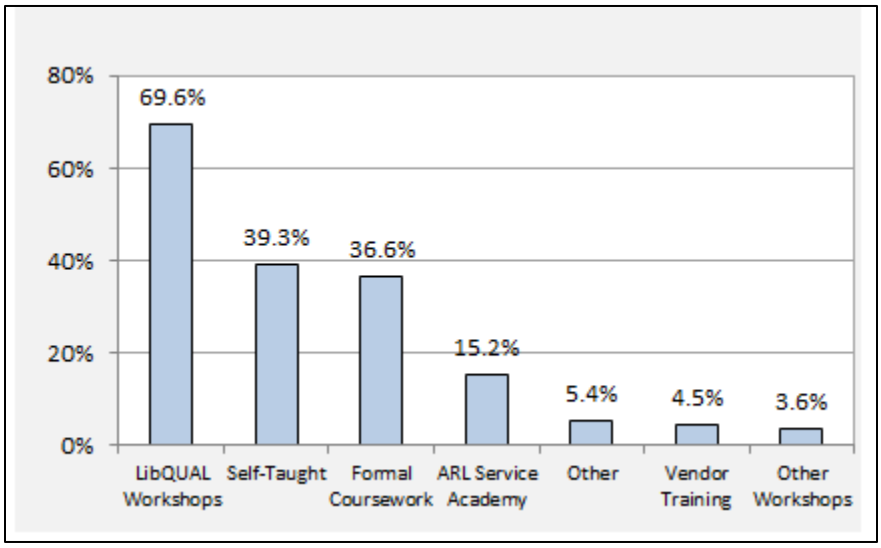

Figure 11
Training activities (respondents could choose more than one option)

Table 1
Basis For Coding the Comments

Basis for Coding the Comments:*	*%*	*N*
Emergent keywords or concepts (e.g., "service hours") developed from reading the comments?	91.9%	102
Whether or not it expressed a "positive" or "negative" perspective/experience of the library?	67.6%	75
The LibQUAL+® dimensions: Affect of Service, Information Control, & Library as Place?	55.0%	61
The number of distinct topic(s) in a single respondent's comment?	46.8%	52
A pre-set list of keywords or concepts (e.g., "service hours")?	41.4%	46
The 22 individual LibQUAL+® questions and/or the 5 local questions?	27.0%	30
Other	10.8%	12

individual LibQUAL+® questions (done by only 27.0%). A couple of respondents specifically mentioned that creating a word cloud to visually display the key concepts that emerged from their LibQUAL+® comments was an effective tool, especially in communicating their findings to others.

In order to enhance consistency and objectivity, a number of steps were often implemented, including training, using previous coding schemes, and having others check the work of a single coder (33% of "other"). See Table 2.

Roughly half (51.4%) of those responding to the survey did not document the process they used to

code/analyze their LibQUAL+® comments (Table 3). The most common documentation produced was lists of tags/codes with definitions and descriptions of the procedure or methodology used.

Nearly all (92.7%) of the responding libraries reported using their LibQUAL+® comments internally to improve library operations (Table 4). Libraries also typically incorporated the comments into local university reports (75.5%) and used the comments in outreach communications to the university community (60.9%). Notably, roughly half (46.4%) of respondents said they either did or planned to include their LibQUAL+® comments in communications with professional communities (e.g., in conference presentations or professional publications).

Benefits

The survey asked, "For your library, what was the best benefit of coding the comments?" The two most frequently mentioned benefits were (1) that the comments helped to identify action items for

Table 2
Consistency in Coding

Consistency in coding was assured by:*	*%*	*N*
Training and/or discussion was conducted ahead of time for all participants to ensure a common understanding of the application of the codes/tags	44.6%	37
Coding schemes and definitions from previous survey administrations were consulted	44.6%	37
Other (please specify)	43.4%	36
Each comment was coded independently by at least two people	27.7%	23
Comments were randomly assigned to people doing the coding	12.0%	10

*Respondents could choose more than one option.

Table 3
Documentation Type

Documentation Type*	*%*	*N*
None; did not document the process	51.4%	55
Code book (list of tags/codes, definitions, examples, etc)	27.1%	29
Description of procedure and methodology	25.2%	27
Other (please specify)	17.8%	19

*Respondents could choose more than one option.

Table 4
Uses of Comment Data

*Uses of Comment Data**	*Yes*	*No*	*Plan to do*
Internally within the library for operational improvements	92.7%	0.9%	6.4%
Incorporated into administrative reports to the university community (e.g., in annual report, budget request, etc.)	75.5%	7.3%	16.4%
Included in outreach communications to the university community (e.g., in announcements for new services)	60.9%	18.2%	17.3%
Included in communication with professional community (e.g., in conference presentations or professional publication)	25.5%	43.6%	20.9%
Included in outreach communications to external audiences such as donors or potential donors (e.g., demonstrate satisfaction with funded gifts or express need for funds, etc.)	22.7%	38.2%	27.3%
Other	3.6%	20.9%	0.9%

*Respondents could choose more than one option.

improvement, and (2) that the comments helped the library better understand its users (Figure 12). Other benefits included providing results and examples that can be communicated to various library constituents such as the provost or potential donors, identifying and analyzing specific needs and issues raised by users, identifying trends and patterns, and corroborating the quantitative survey data.

Challenges

When it came to the biggest challenges of coding the comments, time constraints were mentioned most frequently (Figure 13). Time here referred not only to the duration of coding itself, but also included the time it took to learn new software, and the time to manage multiple coders. Closely related to lack of time was the expressed challenge of lack of people/staff to perform the coding and analysis. Another resource-related challenge was the lack of appropriate software.

Respondents also described a number of challenges related to the process of performing the actual coding and analysis, including developing categories/groupings for coding schemes. Other less frequently mentioned challenges included dealing with multiple concepts, maintaining consistency throughout the coding process, the difficulty in maintaining objectivity, and the need for assistance in analyzing and interpreting the data. Some respondents also commented on the sheer volume of the qualitative data (the average number of comments per responding library was 379, with each comment likely to contain numerous concepts to be coded separately).

Support Needed

The survey asked, "What kind of support (from your library, institution, ARL, software vendor, etc.) would be most helpful to you in doing qualitative analysis of LibQUAL+® comments?" Software purchase and software training were

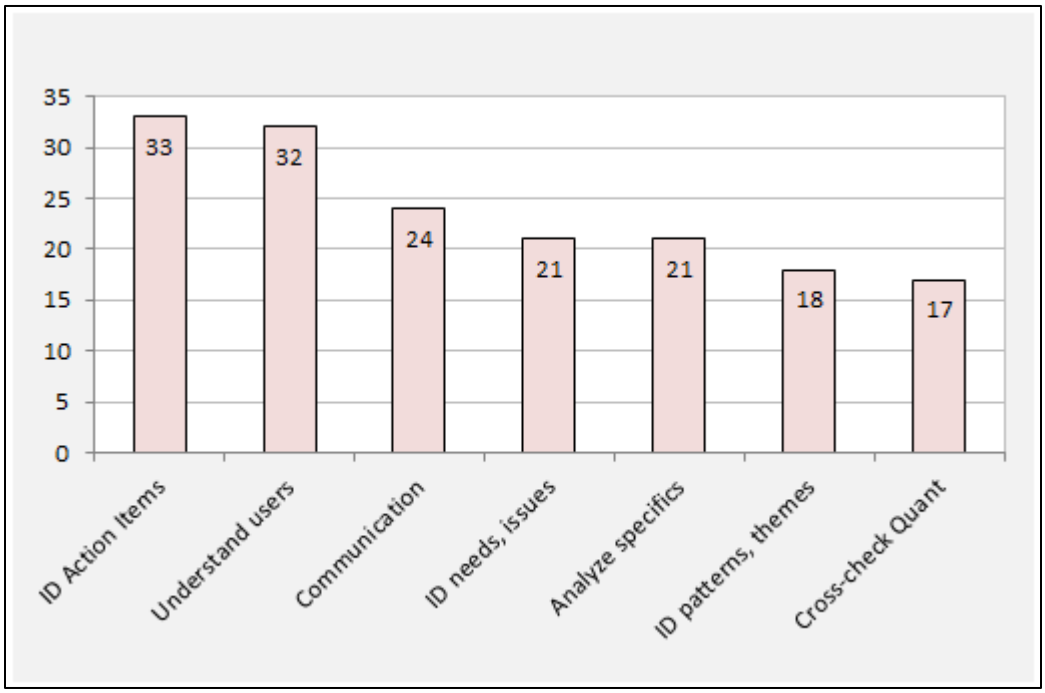

Figure 12
Best benefits of coding

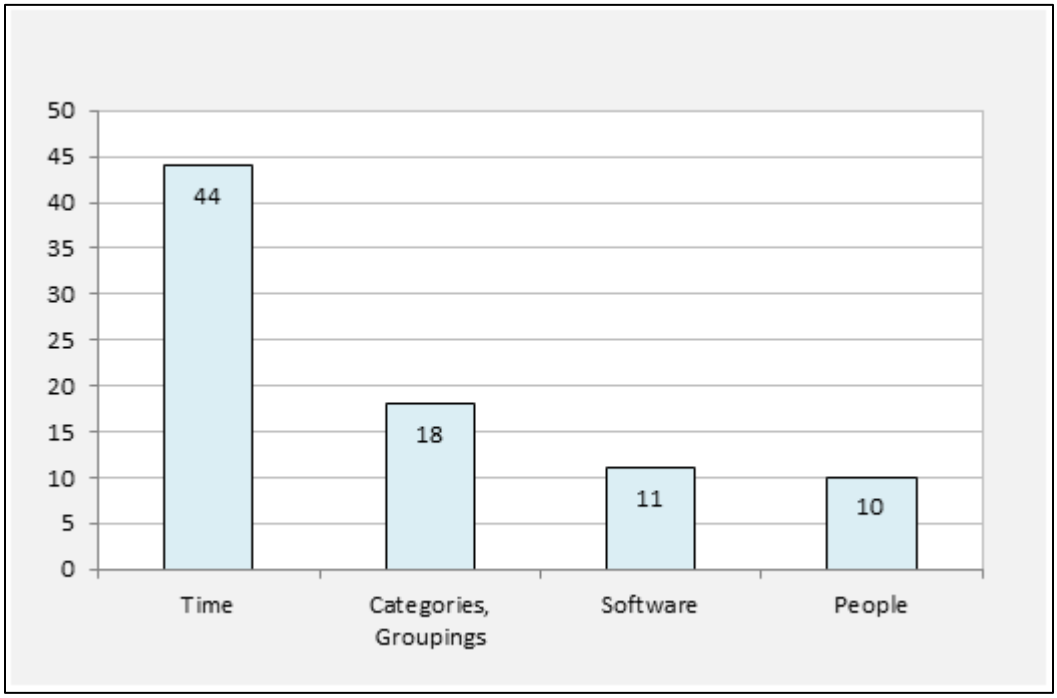

Figure 13
Biggest challenges of coding

cited most frequently (Figure 14). Respondents also made a number of suggestions regarding sharing information, experiences, and work products in conducting the coding of LibQUAL+® comments, as well as sharing the results of the qualitative analysis. For example:

- "Perhaps the sharing of the index terms that others have used"
- "It might be interesting for a group … to draft a thesaurus and research commonalities and trends across universities."
- "It would be great to share comments or types of comments, for informal benchmarking, similar to how we can compare our scores on items through the notebooks."

ARL was gratefully acknowledged for their many workshops and training/sharing sessions on LibQUAL+® generally, but there was also an expressed interest in online training/webinars on coding. In addition, a desire for basic training in qualitative research theory/methodologies was mentioned, as well as training for the actual coding and analysis. More staff to help with coding was desired by several respondents.

Recommended Resources

Finally, the survey asked the respondents to recommend helpful resources for someone new at starting a coding project. The resource mentioned most often was ARL with its myriad activities which include publications, the Library Service Quality Academy, the Library Assessment

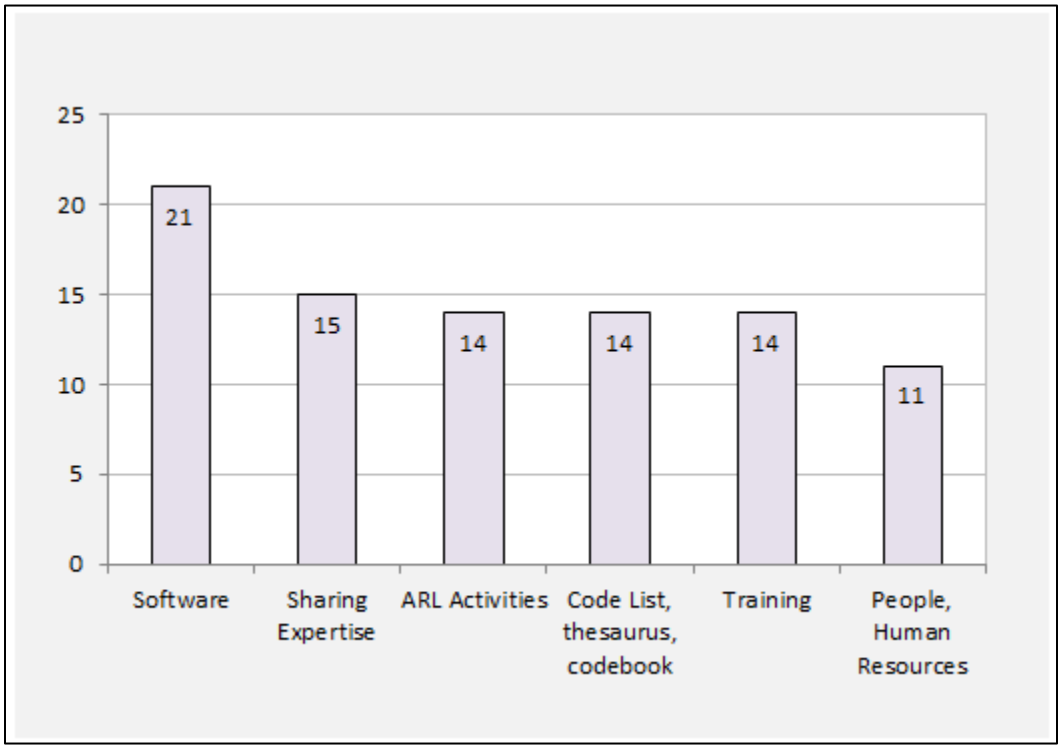

Figure 14
Most helpful support for coding

Conference and proceedings, the LibQUAL+® website and workshops, and the Assessment listserv/blog (Table 5). Other resources mentioned included experts on campus, software vendors' workshops and websites, and formal research courses. The works of two institutions were mentioned specifically: the Brown University guide (http://old.libqual.org/documents/admin/BrownU_2005_LQ_qual_method.pdf) and articles from Notre Dame (see, for example, Jones & Kayongo, 2009).

Table 5
Recommended Resources

Recommended resources:	*N*
ARL Activities	20
None or Unsure	12
Online Resources	9
Software Manuals, Training, Tutorials, Websites	7
Articles, Books	6
Suggestions	5
Formal and Informal Coursework	4
Institutional, Campus Resources	3
Manuals, guides	3

Several specific resources were listed by survey respondents as helpful starting points for conducting qualitative research:

Corbin, J. & Strauss, A. (2008). *Basics of qualitative research.* Los Angeles, CA: Sage. (Or another book on grounded theory generation)

Richards, L. (2005). *Handling qualitative data: A practical guide.* London: Sage Publications.

LaPelle, N. (2004). Simplifying qualitative data analysis using general purpose software tools. *Field Methods*, *16*(1), 85-108.

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Conclusion

Comments obtained from the LibQUAL+® survey can be useful for strategic planning, understanding users, identifying areas for improvement, and prioritizing needs. Clearly, the survey results indicated a strong interest in systematically analyzing the open-ended comments from the LibQUAL+® survey: nearly 87% of respondents performed qualitative analysis on their most recent LibQUAL+® comments, and of that group more than 65% utilized a computer software tool in conducting that analysis. In more than half of the responding libraries, LibQUAL+® analysis was conducted by individuals or groups with permanent responsibility for assessment. However, nearly 33% of respondents indicated they had no training and were self-taught regarding qualitative analysis.

Overall, respondents expressed a strong desire for assistance in learning how to code and for knowing the best practices used by other libraries. Far and away, Microsoft Excel was the tool of choice as nearly 75% of respondents used it for some aspect of their analysis. There appeared to be some confusion about the capabilities of text analysis software packages, presumably by those who had not used such a tool (e.g., several respondents commented on

not using any software that "automatically" assigned codes to the text).

A key suggestion raised by respondents to this survey was for practitioners to consider sharing the fruits of their labor more widely (including coding taxonomies and coding strategies) as well as broader discussion of qualitative analysis methods, strategies, approaches, and practices. To this end, it was encouraging that more than half of the survey respondents indicated that they either already had or planned to include their LibQUAL+® comments in communications with professional communities (e.g., in conference presentations or professional publications). Such sharing of information, methods, and results should be welcomed given that the literature review performed as part of this study revealed very few items that focused on performing a systematic analysis of LibQUAL+® comments.

Administering a LibQUAL+® survey typically results in a wealth of data, and librarians want to know how best to use it. Performing qualitative analysis of the open-ended comments is a typical practice with multiple benefits accompanied by multiple challenges. A variety of tools and methods are utilized by libraries.

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