How LIS Scholars Conceptualize Rigor in Qualitative Data

Paula R. Dempsey

Science is a conversation between rigor and imagination.

Andrew Abbott

abstract: This study investigated how library and information science (LIS) scholars who used qualitative data explained and justified their methods. It analyzed research tasks mentioned in the methods sections of 151 peer-reviewed LIS studies published from 2011 to 2015 and in a survey of their authors. The study assumed that professors of LIS would express different methodological concerns and perspectives than practicing librarians would. Findings show less contrast than expected between academics and practitioners and highlight five ways in which scholars in both groups frame ideas about rigorous research practices using quantitative and qualitative paradigms. The study provides a basis for expanding conversations about methodology to increase rigor.

Introduction

Qualitative data—nonnumerical evidence either generated through interactions with participants or naturally occurring in the research site—are a rich basis for understanding processes, structures, and subjective experiences relevant to library and information science (LIS). The LIS literature shows ambivalence about the rigor of research in the discipline and, as in the social sciences overall, about the validity of qualitative as compared with quantitative approaches. Yet no study has examined how LIS researchers who use qualitative data express methodological concerns or has explained how they established credible methods.

The sociologist Andrew Abbott defines methods as routine, stylized, accepted procedures for rigorous inquiry. Methodology is the investigation of such procedures.° Ac-
According to Abbott, methods are a living element in communities of practice, peers who interact to learn communally. One setting where LIS forms its community of practice is peer-reviewed journal manuscripts. Investigators use methods sections to explain and justify how they arrived at their findings. Journal editors and peer reviewers influence the final manuscript through their collective understanding of trustworthy practices. Eyal Ben-Ari studied acknowledgments in ethnographies as evidence of the “management of meaning,” that is, “procedures and practices by which anthropologists construct the social and cultural orders of their profession.”

The current study views methods sections in peer-reviewed research articles as evidence of how LIS scholars think about credibility in the creation of new knowledge.

The language used to establish credibility varies by paradigm. Terminology used in quantitative work is not always suitable in a qualitative context. Yvonna Lincoln and Egon Guba defined alternative terms for qualitative research, and Clive Seale delineated how both the existing and alternative terms relate to underlying questions about quality. Seale’s questions can be summarized as follows:

- Truth value, internal validity, credibility: To what extent can the reader trust the findings for these participants in this context?
- Consistency, reliability, dependability: Would these findings occur again with similar participants in similar settings?
- Applicability, external validity, transferability: To what extent can the reader apply the findings to participants in different contexts?
- Neutrality, objectivity, confirmability, impartiality: How did investigators deal with their biases, motivations, interests, or perspectives?

LIS scholars grapple with these questions when explaining their approach to qualitative data.

This study started with the assumption that, because of differences in their training and responsibilities, professors of LIS or a research team led by such a professor would have a different range of methodological concerns and perspectives than would library practitioners, including tenure-system faculty or library staff encouraged to do research. The study addressed the following research questions:

- Which research tasks received the most attention in methods sections and in survey responses from individual authors?
- To what extent and in what ways did studies by academics differ from those by practicing librarians in the tasks they addressed?
- How did LIS scholars frame specific quality concerns related to their research tasks?

This study did not attempt to evaluate the qualitative research practices used. Methods sections provide incomplete evidence about the research process. They do, however, show how the investigators framed their methodological decisions—which tasks deserved mention and how they discussed those tasks. This empirically grounded exploration of thinking about qualitative data in LIS has the potential to increase analytical rigor in the field if, in Seale’s words, it promotes “intense methodological awareness.”
Literature Review

Understanding what LIS investigators say about working with qualitative data requires a larger context of studies about LIS research practices. John Budd analyzed the rhetoric employed in LIS research, emphasizing the importance of the language used by a community of scholars writing “about the vital questions, problems, methods, and actions related to research.” For example, mathematical and economic language can evoke objectivity and neutrality, even in studies that make minimal use of statistical methods and logic. Budd reinforces the need for LIS scholars to actively examine their discourse to effectively communicate knowledge claims. Other studies address key questions about how much LIS research is done, to what extent research is rigorous and contributes to developing theory, which research paradigms and methods are most common, who does LIS research, and how LIS researchers are trained.

Debates about the amount of research and the rigor of research methods in LIS are longstanding. Mirna Turcios, Naresh Kumar Agarwal, and Linda Watkins found that a small percentage (16 percent or less) of articles in LIS journals in the Simmons College Library in 2012–2013 qualified as research. Veronica Gauchi Risso reviewed systematic studies of LIS research methods from 1970 to 2010 and concluded that most studies provide description only and are focused on practical goals. She found minimal scientific development in LIS but was optimistic that recent trends will lead to scientific gains. Charles Hildreth and Selenay Aytac selected research articles from 23 journals from 2003 to 2005 and pointed out shortcomings in sampling techniques, sample size, response rate, transparency in data collection and in analysis procedures, and author-identified limitations (what they called the “humility factor”). Of the articles examined, 27 percent discussed validity or reliability, 35 percent mentioned limitations, and 52 percent described the need for further research.

Numerous analyses of research paradigms and methods have agreed that descriptive, quantitative, survey-based research dominates in LIS. The studies used widely divergent sampling methods and categories, making comparison difficult. Rebecca Halpern, Christopher Eaker, John Jackson, and Daina Bouquin called for those involved in evidence-based librarianship to “#DitchTheSurvey” in favor of a variety of methods. Heting Chu analyzed 1,162 research articles published between 2001 and 2010 in three major LIS journals and found a greater variety of methods over the decade but no evidence of increased use of qualitative methods. Pertti Vakkari compared studies accepted for conferences in 1996 and 2008 and concluded that submissions trended away from quantitative, explanatory work and toward descriptive, qualitative studies. Qualitative surveys made up one-third of submissions in 1996 and half in 2008.
Studies focused only on qualitative work raised similar concerns. Waseem Afzal recommended focusing on research questions likely to contribute to theory building, rather than on descriptive snapshots. Sylvain Cibangu analyzed 500 peer-reviewed articles published in 2010 and 2011 in five journals and found that few explicitly stated their contributions to the literature or used terms relevant to qualitative research. His own study lacks a methods section describing sample selection and analytical techniques.

Throughout the social sciences, researchers used qualitative methods, such as ethnography, in which investigators closely observe the activities of library users or other groups; narration, which analyzes journals, interviews, or other stories of lived experiences; and small-N analysis, the study of a small number of cases. Early debates about qualitative methods centered on the role of statistics in establishing credibility. An editorial by Charles Davis and articles by the team of Alan Sandstrom and Pamela Effrein Sandstrom defended the superiority of statistics-based methods against the qualitative perspective championed by Nancy Thomas and James Nyce. Jana Bradley and Brett Sutton called for LIS researchers to “heighten their methodological consciousness” to get beyond the battle between the quantitative (hard) and qualitative (soft) paradigms. They urged researchers to “learn to practice methodology as a critical activity that questions the framework in which data emerge and puts theory to the test by looking for congruence between theory and data.” Two teams, that of Andrew Shenton and Pat Dixon and that of Shenton and Naomi Hay-Gibson, provide “debates,” “dilemmas,” and “paradoxes” to assist LIS scholars in developing awareness of methodology. Especially relevant to the current study is the authors’ call to combine qualitative and quantitative paradigms by carefully structuring a research design for consistency while staying open to new concepts that emerge during data collection.

Studies of who publishes LIS research have focused on the contributions of practicing librarians (authors employed in libraries) in comparison to LIS professors and other academics (authors employed in library or i-schools or other disciplinary departments). S. Craig Finlay, Chaoqun Ni, Andrew Tsou, and Cassidy Sugimoto analyzed 4,827 articles published from 1956 to 2011 and found fewer studies by practicing librarians over time. Heidi Julien, Jen (J. L.) Pecoskie, and Kathleen Reed examined 749 studies of information behavior, of which 70.6 percent were research studies. They found authorship was 56.6 percent by academics and 36.7 percent by librarians, a reverse in proportion from the previous decade. They viewed the declining number of librarian authors and a shift from professional to scholarly journals as troubling signs of a disconnect between research and practice. Similarly, Deborah Blecic, Stephen Wiberley Jr., Sandra De Groote, John Cullars, Mary Shultz, and Vivian Chan found in the literature from 2003 to 2012 declining contributions by practitioners in academic libraries to peer-reviewed journals founded before 2003 as compared with earlier periods.

Those responsible for training librarians have studied the need for, and best approaches to, methods training. In a 2002 survey, Ronald Powell, Lynda Baker, and Joseph Mika found that “slightly more than half the respondents believed that the LIS master’s program they attended prepared them to read and understand research, but less than one third thought that they could do research.” Marie Kennedy and Kristine Brancolini found a correlation between the confidence of academic librarians in the discrete steps of the research process and their likelihood of conducting and publishing studies.
erine Hansman proposed adult learning theory and experiential pedagogy as routes to teaching qualitative research skills and knowledge to librarians. Overall, the literature demonstrates concern about the quantity and quality of LIS research and an ongoing quest for more robust methods.

**Data and Methods**

This study analyzed two complementary data sets: the research methods sections of 151 studies that used qualitative data published between 2011 and 2015 in peer-reviewed journals and a survey of the 310 authors of these studies, of whom 84 responded (27 percent). Citations to articles in the study corpus are available in the online repository figshare.

**Identifying and Analyzing the Article Corpus**

To gather as comprehensive as possible a set of LIS studies using qualitative data, the author searched abstracts in two LIS databases covering journals in librarianship and information science—*Library Literature & Information Science Full Text* (400 journals) and *Library, Information Science & Technology Abstracts* (560 journals). She searched for any of these terms: qualitative, interview(s/ed/ing), focus group(s), narrative(s), grounded theory, ethnography/ies/ic), or action research. Results were limited to peer-reviewed academic articles in English published between 2011 and 2015. The 7,389 results were reviewed to exclude articles not based on empirical research (such as articles on theory or policy, literature reviews, or “how-to” guides), studies using only numerical data, or projects with a research site outside the United States or a first author employed at a non-U.S. institution. The study was limited to the United States because of the complexity of accounting for possible cross-national differences without the ability to analyze examples in other languages.

The author classified studies as either academic or practitioner, based on the sole or first author’s institution and position. Academic studies (*n* = 65) had a sole or first author employed in a school of library or information science (61 studies) or other disciplinary department (such as computer science, health sciences, communication studies, or English). Practitioner studies (*n* = 86) had a sole or first author who worked in a library. Categorizing studies by first author assumes that authors are listed based on the importance of their contribution, which is not always the case. Ninety-four studies had more than one author: 75 had authors in the same category; 12 had mixed authorship with an academic first author (2 of these studies listed authors alphabetically); and 5 articles had mixed authorship with a practitioner first author (2 listed authors alphabetically). Therefore, if alphabetic listings indicate an equal contribution for all authors, four studies may straddle the categories. The author further categorized studies by year of publication, journal title, data type or types, sampling technique, sample size, and participant group or groups.

Content analysis of the methods sections used NVivo software version 10. Analysis included both a predefined coding scheme for research tasks and open, interpretive cod-
How LIS Scholars Conceptualize Rigor in Qualitative Data

ing within each task to understand how the studies framed issues of rigor. The author first identified sentences that described, explained, or justified procedures for the research tasks, and then counted the words devoted to the following tasks:

- Designing the method: How investigators developed techniques to collect evidence relevant to the research questions and why that type of evidence was most appropriate.
- Sampling: How investigators defined the population of units of analysis (people, places, or documents) and selected specific units to observe.
- Protecting human subjects: How investigators assessed risk to human subjects (if any), designed means to protect them, and gained institutional permission to carry out the study.
- Recruiting participants: How investigators identified and contacted members of the target population and persuaded them to participate.
- Gathering data: How investigators applied the research design and explained departures from the original plan.
- Analyzing data: How investigators interpreted raw data to glean findings.

Open coding within each task marked how the studies described the benefits of the procedures used and any author-identified limitations of those procedures (see Table 1). The limitations of coding for the research tasks included reliance on a single coder. The coding scheme required relatively low inference, but many research tasks are neither distinct nor sequential. Thus, methods sections often mingled tasks, and coding entire sentences to preserve context might have inflated numbers for some tasks. The benefit of this approach was that slicing the large data set into multiple facets imposed the discipline of systematically reviewing the methods sections at least six times, leading to fresh insights.

Examining published material does not constitute research on human subjects. The study aimed to examine research practices in the profession overall. So, to prevent inferences about the rigor of individual studies, the findings omit citations for brief illustrative quotations.

Procedures for the Survey

The author developed the survey online in the Qualtrics platform. It included objective questions on professional responsibilities, degrees held, methods training, institutional support for research, and Institutional Review Board (IRB) experience. A closed-ended, subjective question asked which research task required the most effort. Open-ended, subjective questions included what advice respondents would offer novice researchers and what they would do differently if they were to do the study again (see Appendix A).

Local reviewers tested the questions for relevance and clarity. To aid recall and specificity, respondents were asked to reflect on their experiences related to a study whose title was shown in the survey. For authors with several eligible studies, the most recent publication was shown. Nonetheless, participants asked to comment about a study published several years earlier might have struggled with accurate recall. In addition, selection bias cannot be ruled out, because survey respondents might represent a subset of the author population most interested in research methods or most committed to rigorous research.
Table 1.
Examples of open coding of methods sections by research task

<table>
<thead>
<tr>
<th>Research task</th>
<th>Frequently used codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designing the method</td>
<td>Action research, critical incident, diary, ethnography, existing design, experiment, focus group, grounded theory, interview, observation, pilot pretest, recall, self-reported, social desirability bias, survey, triangulation</td>
</tr>
<tr>
<td>Sampling</td>
<td>Representativeness, response rate, sample size, screening, technique (convenience, purposive, random)</td>
</tr>
<tr>
<td>Protecting human subjects</td>
<td>Anonymity/confidentiality/privacy, informed consent, Institutional Review Board (IRB), power imbalance</td>
</tr>
<tr>
<td>Recruiting</td>
<td>Incentive</td>
</tr>
<tr>
<td>Gathering data</td>
<td>Accuracy, flexibility, member checking, note-taking, objectivity/bias, recording data, reflexivity, researcher stance, social dynamics, transcription</td>
</tr>
<tr>
<td>Analyzing data</td>
<td>Audit trail, constant comparison, content analysis, expert checking, inductive/deductive, memos, peer checking, preset coding, reliability/trustworthiness/validity, software, statistical reliability, theoretical saturation</td>
</tr>
</tbody>
</table>

The Institutional Review Board approved the study as exempt on the basis that no IP (Internet protocol) addresses would be collected and that the identity of respondents would be hidden before analysis (protocol 2016-0698). There was no association between the two data sets, and the author deleted individual contact information from Qualtrics before doing basic quantitative analysis. Open-ended responses were analyzed using the same process of predefined task codes and open coding for themes of rigor used with the methods sections.

Examining the work of LIS researchers and studying the methodological texts they cited prompted further reflections on the practices used in the current study. See Appendix B.

Findings

Findings demonstrate, first, what studies and survey respondents said about each research task and second, how they said it. The content analysis showed less contrast than expected between academics and practitioners in which research tasks they mentioned. Five specific questions about working with qualitative data identified in both data sets showed that scholars in both groups framed methods in ways that drew from both quantitative and qualitative understandings of rigor.
Descriptive Content Analysis

Table 2 shows that the corpus of 151 articles came from 26 journals and had research methods sections that averaged 984 words. The methods sections in the 65 academic studies were 6 percent longer than the overall average (1,050 words) and 5 percent shorter (935 words) in the 86 practitioner studies. The largest group of investigations (35 percent) employed interviews as the only type of data. The next largest group (24 percent) used multiple data types (various kinds of qualitative data without interactive observation). Fifteen percent of the studies used ethnography, constituting a wide range of data types, including personal interaction or observation. Smaller sets of studies analyzed records and documents, such as student essays, transcripts of chat interactions, syllabi, and websites (9 percent). Other smaller sets used focus groups as the sole data (7 percent); employed mixed methods (6 percent); tested usability of software applications (2 percent); utilized open-ended survey questions as the sole type of data (7 percent); and conducted experiments (1 percent).

Most studies examined students at all levels (40 percent), faculty (8 percent), or both (7 percent), or studied information users not in educational settings (for example, public library patrons or patients, 12 percent). Another 23 percent examined librarians (one of which also studied patrons). Units of analysis other than people were rare. They included documents (6 percent), institutions (3 percent), and events (1 percent). Not all qualitative data were analyzed qualitatively. Investigators used rubrics, tools that provided clear descriptions of each data type; Qsorts, which asked participants to rank and sort a series of statements; and other approaches to count rather than interpret textual data.

Differences in research methods between academics and practitioners were less than the author had expected. Figure 1 shows that research methods sections in academic studies were more likely than those in practitioner studies to mention every research task except designing the method and protecting human subjects. Academic studies far more likely discussed analyzing the data. Figure 2 shows that, on average, studies that mentioned analyzing data and designing the method covered those tasks at greatest length. The largest difference between the groups was the number of words academic studies used to discuss analyzing data (277) compared with practitioners (210). Practitioner studies would more likely mention designing research and protecting human subjects, but their discussions were briefer on average than those in academic studies.

Most studies discussed designing the method (academics, 86 percent; practitioners, 94 percent), usually listing or summarizing the questions asked or describing logistics such as how they administered the survey or organized focus groups. Fewer studies (36 percent) described the process of designing and testing the research instrument or technique. Only 5 percent discussed limitations of their design choices (for example, limited length of a survey, potential problems with participant recall, or presenting the survey only in English). Strategies mentioned for developing a robust research design
Table 2. Journal titles and word counts of the methods sections in studies using qualitative data 2011–2015 ($n = 151$)

<table>
<thead>
<tr>
<th>Journal</th>
<th>Number of articles</th>
<th>Average length of methods sections (words)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>College &amp; Research Libraries</td>
<td>19</td>
<td>1,271</td>
</tr>
<tr>
<td>Journal of Academic Librarianship</td>
<td>18</td>
<td>854</td>
</tr>
<tr>
<td>Library &amp; Information Science Research</td>
<td>17</td>
<td>1,109</td>
</tr>
<tr>
<td>Reference Services Review</td>
<td>16</td>
<td>705</td>
</tr>
<tr>
<td>Journal of the Association for Information Science</td>
<td>13</td>
<td>1,260</td>
</tr>
<tr>
<td>and Technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>portal: Libraries and the Academy</td>
<td>12</td>
<td>988</td>
</tr>
<tr>
<td>Journal of the Medical Library Association (JMLA)</td>
<td>8</td>
<td>629</td>
</tr>
<tr>
<td>Library Quarterly</td>
<td>3</td>
<td>1,224</td>
</tr>
<tr>
<td>Internet Reference Services Quarterly</td>
<td>5</td>
<td>1,026</td>
</tr>
<tr>
<td>New Library World</td>
<td>4</td>
<td>917</td>
</tr>
<tr>
<td>Reference and User Services Quarterly</td>
<td>4</td>
<td>701</td>
</tr>
<tr>
<td>Library Management</td>
<td>4</td>
<td>669</td>
</tr>
<tr>
<td>Journal of Documentation</td>
<td>3</td>
<td>1,112</td>
</tr>
<tr>
<td>Library Review</td>
<td>3</td>
<td>980</td>
</tr>
<tr>
<td>Information Technology and Libraries</td>
<td>3</td>
<td>767</td>
</tr>
<tr>
<td>Library Hi Tech</td>
<td>3</td>
<td>501</td>
</tr>
<tr>
<td>Information Processing &amp; Management</td>
<td>2</td>
<td>2,147</td>
</tr>
<tr>
<td>Journal of Librarianship and Information Science</td>
<td>2</td>
<td>1,904</td>
</tr>
<tr>
<td>Journal of Information Literacy</td>
<td>2</td>
<td>1,120</td>
</tr>
<tr>
<td>Library Trends</td>
<td>2</td>
<td>512</td>
</tr>
<tr>
<td>Libri: International Journal of Libraries and Information Services</td>
<td>1</td>
<td>1,207</td>
</tr>
<tr>
<td>Journal of Information Science</td>
<td>1</td>
<td>827</td>
</tr>
<tr>
<td>ASLIB [Association for Information Management]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proceedings†</td>
<td>1</td>
<td>803</td>
</tr>
<tr>
<td>Performance Measurement and Metrics</td>
<td>1</td>
<td>547</td>
</tr>
<tr>
<td>Library Collections, Acquisitions, &amp; Technical Services</td>
<td>1</td>
<td>286</td>
</tr>
<tr>
<td>Reference Librarian</td>
<td>1</td>
<td>194</td>
</tr>
</tbody>
</table>

*Eighteen studies directed readers to a previous publication for more detail on the methods, which would shorten the methods sections for those studies.

†Name changed in 2014 to Aslib Journal of Information Management.
How LIS Scholars Conceptualize Rigor in Qualitative Data

Figure 1. Percentage of methods sections mentioning each research task in studies by LIS academics ($n = 65$) and by library practitioners ($n = 86$), 2011 to 2015

Figure 2. Average number of words devoted to each research task in the methods sections of studies by LIS academics ($n = 65$) and by library practitioners ($n = 86$), 2011 to 2015
included pilot testing (27 studies), triangulation (using several complementary data sets to “integrate,” “cross-check,” or “ensure consistency,” 14 studies), using instruments or techniques tested in previous investigations (10 studies), and consulting with experts or peers outside the research team (4 studies).

Ninety-one percent of academic studies and 87 percent of practitioner studies mentioned sampling, but 66 percent of academic studies and 62 percent of practitioner studies did not identify the sampling technique. Table 3 shows that the most commonly mentioned sampling techniques were purposive (16 percent, also called purposeful, theoretic, judgmental, or intentional in the studies); convenience (15 percent, also called opportunistic or voluntary); and random (5 percent). All but seven studies reported the sample size. As expected for qualitative approaches, most samples were small; half of the studies had fewer than 20 participants or other units of analysis. In 18 studies that reported a response rate or provided enough information to calculate it, the response rate ranged from 7 to 78 percent (median 26 percent, average 35 percent). Three studies reported the number of responses with no denominator, because participants self-selected in response to an invitation sent to an e-mail list, a website posting, a newspaper advertisement, or a flyer.

Discussions of how the studies protected the rights of human subjects were least common and very brief. Eighteen percent of academic studies and 38 percent of practitioner studies noted permission from an institutional review board to conduct the study. Less than a third of studies discussed either participant privacy (26 percent academic, 29 percent practitioner) or procedures for informed consent (22 percent academic, 23 percent practitioner). Most explanations of how researchers recruited participants noted only where and how invitations were sent (68 percent academic, 60 percent practitioner) and what incentives were provided (31 percent academic, 24 percent practitioner).

Most studies mentioned the process of gathering data (86 percent of academic studies, averaging 104 words; 76 percent of practitioner studies, averaging 80 words). Most of these discussed practical strategies, such as the 76 studies that mentioned the mechanical means of recording data (audio, video, or both) and the 59 that reported transcription. A larger percentage of academic studies (58 percent) than practitioner studies (44 percent) mentioned both recording and transcribing data, and a few studies noted that the transcripts were partial. Other studies discussed member checking (asking interviewees to review transcripts for accuracy, 15 studies) or explained how investigators ensured accurate and detailed note-taking (28 studies).

Although most methods sections mentioned analyzing data, more academic studies did so and at greater length. However, specific explanations or justifications of the analytical process were unusual. The methods sections in 25 academic studies (34 percent) and 21 librarian studies (27 percent) mentioned using software to aid analysis. The largest group of studies (20) referred to NVivo, followed by 12 studies that used a spreadsheet (six specified Microsoft Excel). Smaller groups mentioned ATLAS.ti (five), Dedoose (three), and HyperRESEARCH (two). Ten studies (seven academic, three librarian) mentioned constant comparison, or systematically reviewing new themes against all available data. Of these, two offered further detail on the process and structure of coding and mentioned a codebook or provided the schema in an appendix. Ten studies (seven academic, three librarian) described using memos to develop and document coding decisions. Four studies were exceptions to the lack of detail. Two of the studies
used grounded theory, a research method that involves forming a theory based on the collected data as opposed to gathering data after forming a theory. Two others employed phenomenology and phenomenography, which investigate the qualitatively different ways in which people experience something.

**Descriptive Survey Results**

Survey respondents reported whether their current position was primarily as a researcher (32 percent), primarily as a practitioner (15 percent), or a balance of research and practice (50 percent). On this variable, respondents resembled the roles of the population of 310 study authors, of whom 36 percent were academics, 58 percent practitioners, and 6 percent other. Many of those labeled researcher-librarians in the current study hold faculty appointments or an equivalent status, in part because 68 percent of the authors were employed by doctoral universities where such status is more common. Table 4 shows that 100 percent of survey respondents whose main responsibility was research reported doctoral training in qualitative methods in either LIS or another discipline,
as did 61 percent of librarians and 36 percent of researcher-librarians. Among survey respondents, 88 percent of researchers held a doctorate, as did 54 percent of librarians and 27 percent of researcher-librarians.

Figure 3 shows that 63 percent of researchers, 45 percent of researcher-librarians, and 15 percent of librarians found analyzing data the most effortful part of the research process. Among the 13 librarians, more respondents found designing the research or another task, such as reporting the research or developing theory, more difficult than analyzing the data. Two respondents noted that the tasks were too integrated to respond to the question, and one found them all equally difficult.

**Interpretive Findings of Content Analysis and Surveys**

This study not only looked at what scholars said about the research process but also examined how they said it. Five specific issues about quality, detailed later, showed how different studies drew on quantitative or qualitative ways of thinking about rigorous research. These contrasting approaches to establishing the credibility of research methods linked back to ambivalence about the comparative value of qualitative and quantitative work, ambivalence found across the social sciences and evident among survey respondents. Some respondents perceived a bias against qualitative methods, based on what they had heard from reviewers and editors or held to be common knowledge:

Don’t be discouraged by journal reviewers who don’t understand how qualitative research methods work.

* [Researcher-librarian]

Many academics (most in some instances) see the use of qualitative methodologies as what people do because they don’t know math, as useless and “easy way out” to do research. Publishing and justifying qualitative studies is VERY hard and most people discard the findings based on small sample sizes and inconclusive results that do not properly predict a phenomenon’s progression.

* [Researcher]

One researcher confirmed the stereotype about aversion to statistics, stating as a benefit of a qualitative study that she or he “didn’t have to use SPSS to analyze the data.”

Some survey respondents proposed quantitative approaches for analyzing or building on qualitative data; others spoke about using qualitative work to develop quantitative instruments:

Consider using mixed methods—use qualitative data to build up a theory or extend what you know from quant data. Or the opposite. It’s hard to draw good conclusions from a purely qual study; it is often hard to justify your results.

* [Researcher]
Table 4.
Training in qualitative methods reported* by survey respondents in each research role

<table>
<thead>
<tr>
<th>Training</th>
<th>Researchers (n = 27)</th>
<th>Librarians (n = 13)</th>
<th>Researcher-librarians (n = 42)</th>
<th>Not employed (n = 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLS course</td>
<td>0.00</td>
<td>0.46</td>
<td>0.45</td>
<td>0.00</td>
</tr>
<tr>
<td>Non-MLS MA course</td>
<td>0.15</td>
<td>0.00</td>
<td>0.17</td>
<td>0.00</td>
</tr>
<tr>
<td>LIS PhD course</td>
<td>0.59</td>
<td>0.15</td>
<td>0.12</td>
<td>1.00</td>
</tr>
<tr>
<td>Non-LIS PhD course</td>
<td>0.41</td>
<td>0.46</td>
<td>0.24</td>
<td>0.00</td>
</tr>
<tr>
<td>Continuing education</td>
<td>0.37</td>
<td>0.62</td>
<td>0.40</td>
<td>0.50</td>
</tr>
<tr>
<td>Internal staff development</td>
<td>0.07</td>
<td>0.23</td>
<td>0.24</td>
<td>0.50</td>
</tr>
<tr>
<td>Self-education</td>
<td>0.63</td>
<td>0.77</td>
<td>0.83</td>
<td>0.50</td>
</tr>
<tr>
<td>Training by senior researcher</td>
<td>0.33</td>
<td>0.08</td>
<td>0.19</td>
<td>1.00</td>
</tr>
<tr>
<td>None</td>
<td>0.00</td>
<td>0.00</td>
<td>0.02</td>
<td>0.00</td>
</tr>
<tr>
<td>Other</td>
<td>0.00</td>
<td>0.00</td>
<td>0.10</td>
<td>0.00</td>
</tr>
</tbody>
</table>

* Respondents could report more than one type of training.

Figure 3. Research stages identified by respondents as requiring the most effort*
[There] always has to be some quantitative to go along with the qualitative.

[Librarian]

The qual data made a robust quant survey possible.

[Researcher-librarian]

Other respondents encouraged novice researchers to embrace qualitative methods on their own merits:

To be bold, and don’t feel embarrassed of choice, or as if you were choosing a secondary methodology!

[Researcher-librarian]

And to think about qualitative methods as their own thing—do not explain, justify or describe them using language and concepts drawn from positivist or empirical studies.

[Researcher-librarian]

Like the mix of perspectives in the survey specific concerns about rigor in the methods sections draw on both quantitative and qualitative understandings. The detailed findings that follow demonstrate specific issues where researchers drawing on a quantitative paradigm balance others relying on distinctively qualitative thinking.

**Participant Understanding versus Not Biasing Results**

Should research techniques define terms carefully to ensure participants understand questions in the same way investigators do? Or should they refrain from imposing a mental model on participants to avoid “leading the witness”? One researcher-librarian respondent alerted novice investigators that “the process can be confusing” to participants who “thought we were coming by to help” rather than to learn about their experiences. One practitioner study used pretesting “to ensure questions were understood by pilot participants as the researcher intended.” Two practitioner studies explicitly defined the terms *digital collections* and *collaboration* for participants during the interviews. Another practitioner study concluded that discrepant understandings among participants about the definition of *reading* limited the findings. Advice from survey respondents reinforced the importance of carefully framing questions for understanding:

Fine-tune your interview questions and pretest the questions BEFORE going forward: You want to make sure that you get the responses you need!

[Researcher-librarian]

I’d encourage them to pilot test their research instrument more than once; for qualitative research in particular, the way questions are phrased plays such a critical role in the data you collect, so it’s incredibly useful to pilot the instrument with as many people as possible.

[Researcher]
In contrast, other studies tried to avoid putting words in participants’ mouths or inadvertently changing their behavior. One researcher-librarian said: “Would have talked with students in the target population before developing interview questions. Our own biases led us a little astray.” A practitioner study used open-ended questioning to capture the words or voices of participants and to “reduce as much as possible the preconceptions of the interviewer.” In an academic study, “The researchers did little talking in the interviews and encouraged participants to describe their experience in their own words.” Another practitioner study avoided defining archives for participants “to ensure they were not led in any particular direction,” and an academic study avoided the term information literacy because “once provided with a definition . . . students tended to accept and adopt it in the conversation. This worked against the research goal of understanding student views.” A study by an MLIS student stated, “It was apparent during the first interview that my conception . . . was far too narrow . . . and that I needed to take care not to lead my respondents.” An academic study concealed the purpose of the (benign, noninvasive) study “to preserve the spontaneity” of participant behavior. A practitioner study “looked at how group dynamics would influence the discussion in the focus groups and tried to structure them in a very organic way.”

Consistency versus Flexibility

Should investigators strive for standard questions, settings, and investigator behavior in data gathering? Or should they embrace flexibility and adjust procedures to fit the emerging data? Studies that focused on standardization described efforts “to assure uniformity in data collection” (practitioner study), “to ensure consistency in the interview context” (academic study), or to “insure that coverage of subjects is fairly uniform from one participant to the next” (academic study). Studies embracing flexibility included an academic study that said, “Questions were added in response to . . . emerging themes.” Another changed the last interview after participants offered “the brilliant suggestion” to page through a workplace artifact. A third study incorporated “some variations or additional questions which came up in the course of some of the interviews.” One practitioner study reported, “Interviewers frequently departed from the script to elicit more lengthy responses or to seek clarification from the subjects on topics of specific interest.” Another said, “The interview guide remained flexible . . . throughout the research process.” One academic study combined the approaches, presenting flexibility as the path to consistency: “The ability to follow up on an answer . . . ensures that the same type of information is gathered from every interview.”

Distancing versus Insider Perspective

Should investigators distance themselves from previous experience and perspectives in data gathering? Or does existing knowledge of the setting and the phenomena contribute to understanding? Some studies mentioned strategies to prevent inhibiting the participants’ candor, known as social desirability bias. Others wrote about the advantages of the author’s position as an insider. Distancing strategies included assuring participants “that there were no right or wrong answers” and having a nonlibrarian or a librarian working in a different area conduct focus groups or interviews “in the hopes that par-
Participants might be more candid with her than they might be with a librarian,” “so that students were not intimidated by being observed by a librarian,” or so that “bias was mitigated.” For the 23 percent of studies about the work and perceptions of librarians, some investigators viewed insider status as a benefit to building rapport, gaining trust, and having “a common orientation to their workplace,” with the possible drawback of suppressing “negative opinions or failures.”

Representativeness versus Variation

In selecting units for examination, should investigators strive for a representative sample, one that mirrors the population in important ways? Or should they aim to maximize variation in the sample? Some studies valued representativeness, claiming that the people who participated in the study resembled others in that context. Other studies valued variation, declaring that different kinds of people took part, no matter how few there were. Two survey respondents noted that, if they were to repeat their studies, they would try to improve representativeness:

Add more quantitative—possibly community survey for more representative picture.

[Librarian]

I would try to find more automated ways to collect the data so I could collect more data to analyze. If we had had a larger data set, we could have drawn more generalizable conclusions.

[Researcher-librarian]

Studies that mentioned representativeness either claimed the sample was representative (supported by evidence or not) or justified using a nonrepresentative sample (supported by methodological theory or not). Of the 14 studies that claimed a representative sample, 10 provided a chart or graph showing that the sample and the population were similar on specific characteristics or provided more general evidence, such as efforts to collect data across a range of times or to examine a certain percentage of the population.

Few studies explained or speculated on how those observed might vary from the overall population. Two studies discussed the implications of specific groups being excluded by how the population was defined. Two others acknowledged that the timing or location of promotional materials might have led to selection bias. Another two studies were transparent about the fuzziness of the population definition itself: one discussed the inadequacy of applying a male-centered definition of class status to women, and the other reflected on the difficulty of categorizing faculty by discipline. Two practitioner studies offered general statements about possible selection bias: “Students involved may be different from other students enrolled at this college in other important ways” and “these students undoubtedly brought different
perspectives to the study than a more representative set . . . would have.” Another practitioner study stated, “The simple act of agreeing to discuss [a topic] for thirty minutes or more demonstrates a commitment to the concept,” and an academic study admitted, “It is possible that only people with stronger or positive opinions might have chosen to participate.”

Ten studies acknowledged that they overrepresented participants from a specific program, academic major, gender, or other category. These claimed that the investigation might “still provide useful cases” or “lead to the emergence of new angles on relatively unexplored phenomena,” or that its value should be seen as “suggestive,” as a source of “significant observations or insights,” or as useful to “confirm prior research,” to “indicate useful future directions,” or “identify key challenges.” One academic study explained that it did not cherry-pick examples for analysis, while another implied that it had, noting that the units were “not necessarily representative” but that “they reflect many of the themes we have observed . . . over the years.” Only one academic study mentioned the validation strategy of actively searching the data for “negative or discrepant information” as a means of confirming that investigators did not simply find what they expected to find.

The other side of the conversation, maximizing variation, shifts from a logical model typical of quantitative work to focus on understanding complexity. Such studies stated that their goal was not to generalize to a larger population or context but rather to seek depth within a specific group or context to explore and to maximize variation, using such phrases as “reveal varying experiences,” “variations in all major site characteristics,” “fully represent the complexity,” and “as many different perspectives . . . as possible from a comparatively small sample size.” Two studies drew on phenomenographic theory to justify not using a representative sample; their purpose was “not to identify behavioral trends, but rather to reveal varying experiences of a phenomenon” (academic study). Another academic study stipulated that, in qualitative work, “There are no ‘outliers’ but rather ‘cases’ and ‘incidents,’ each of which contributes to an understanding that is always in process.”

Reliability versus Transparency

Is it important to quantify the similarity in analytical procedures within a research team or consistency by a single researcher? Or does transparency about the interpretive scheme also establish credibility? Some authors focused on demonstrating the reliability of analytic or interpretive procedures, while others emphasized transparency in interpretation. Ten academic studies and four practitioner studies reported a statistical measure of inter-coder or intra-coder reliability, either for consistency of one researcher at two points in time or across multiple investigators. Specific statistical correlations used included Spearman’s rho, intra-class correlation coefficient, Krippendorff’s alpha, Cohen’s kappa, and Holstii’s coefficient. In a contrasting case, one practitioner study stated that “to facilitate reliability in our analysis,” a single investigator coded the data.

Other procedural means for establishing reliability included peer review and debriefing, mentioned in three academic and two practitioner studies. Teams held discussions and “coordinated data analysis” to make sure “codes did not drift from one transcript
to another” or to ensure “trustworthiness of findings.” Survey respondents advised novices to use these approaches:

Have a clear analysis plan in advance of data collection . . . Plan and execute the steps to demonstrate validity and reliability (quant terms to be sure, but they have their equivalences in qual—see works by [Yvonna] Lincoln and [Egon] Guba).

Show your results to others familiar with the phenomena you are investigating in order to gather feedback about the face validity of your conclusions. When writing up results, articulate your process and be clear about the steps you took to be systematic and to mitigate bias.

Four academic and four practitioner studies mentioned expert checking, such as one academic study in which an outside researcher “with expertise on this subject” provided extensive comments and suggestions” on the final draft. In another, an independent auditor reviewed the study “to ensure that procedures were being accurately followed and that appropriate conclusions were being drawn.” A third stated that an expert “reviewed the data for any potential bias that the researcher introduced” and found none. One other academic study and two practitioner studies mentioned establishing an “audit trail,” a step-by-step record in which, for example, “extensive memos were kept of coding decisions” and “data and analytic notes were preserved to provide dependability.”

An alternative to claiming the objectivity of interpretation on procedural grounds (quantitative measures, peer or expert review, or audit trails) was to acknowledge that the researcher’s presence in the analysis is inevitable: “Like any ethnographic research, data gathered through interviews is filtered through the lens of the authors themselves” (practitioner study). In this framing, known as positionality or standpoint, investigators stipulated their social position and accounted for them in the results: “I maintained a researcher reflection journal to make these issues of positionality in data-gathering and analysis as explicit as possible, and to limit the potential for my opinions to drown out the voices of the students whose stories I explored in this study” (practitioner study).

Some academic studies noted an effort to “lay aside personal preconceptions during the coding process, a process known as bracketing or epoche,” or claimed that they “made every attempt to bracket our experiences,” tried to “maintain an awareness of the potential for their own personal expectations . . . to influence data collection and analysis,” or “made every effort to reflect upon and minimize the impact these preconceptions might have on analysis.” A contrasting case to setting aside preconceptions was an academic study that explicitly identified with the population of interest: “Findings were generated within the authors’ emerging roles as community action researchers, in conjunction with their own understanding” (academic study). This strategy alerts readers to the context of production of the data and provides the information needed to assess the validity of findings.

**Discussion**

This study found less difference than the author had expected between academics and practitioners as to which research tasks were mentioned in both methods sections and survey responses. The biggest contrast between the groups was that academic studies
would more likely discuss analytical procedures and do so at greater length. Within each group, some studies presented decisions about methods that reflected quantitative standards of quality, and others embraced a distinctively qualitative perspective.

Convincing readers that a research design is credible involves demonstrating that it measures what it claims to measure; or, in more qualitative terms, that investigators observed phenomena relevant to their research questions. One issue that would limit validity in interview questions, for example, is if participants’ answers did not respond to the questions investigators thought they asked. On the other hand, defining terminology and outlining the topic of interest could potentially impose meanings that had not previously occurred to participants. The concern about participants understanding questions as worded by investigators uses a quantitative frame, specifically the stimulus-response model of experimentation, in which a change in the environment (the stimulus) results in a change in behavior (the response). It assumes a fixed meaning for the concept being studied. Studies using this model can reinforce credibility by employing cognitive pretesting and other means to demonstrate how participants understood the instrument. The concern about not imposing meanings on participants adopts a more qualitative frame. Studies using this model can reinforce trustworthiness by transparently presenting the investigators’ preconceptions and their attempts or missteps in keeping the study open to alternative meanings.

The contrasting approaches to selecting units for analysis are the foundation for different knowledge claims. Representativeness is the basis for claiming to understand the whole population (that is, generalizability). Maximizing variation is the basis for claiming to understand the entire phenomenon of interest. Both kinds of claims are undermined by selection bias—either cherry-picking examples to support an argument or lacking awareness of important differences between the group observed and others in the setting. Studies can increase rigor by explaining how the sample was selected and, if claiming representativeness, by providing either evidence of similarities or reasonable suppositions of differences between the sample and the population. Studies that do not seek to generalize to the local or general population need not apologize for a small, nonrepresentative sample. Instead, they can bolster the value of the study by explaining efforts to maximize variation and how they searched for outlying or contradictory cases.

The tension between consistency and flexibility in gathering data mirrors the issues noted for designing the method. Presenting questions in the same way for all participants...
emulates the credibility of established experimental methods. Flexibility in data gathering embraces the qualitative paradigm of a social construction of reality, in which participants and researchers work together to generate an intersubjective understanding of the topic. Again, credible research entails transparency about the conditions of the setting: How were power imbalances addressed? How was rapport established and revealed in the data?

The term **reliability** draws on a quantitative paradigm. Does the instrument used to measure a phenomenon register the same reading in multiple trials? Statistical checks for inter-coder reliability show whether members of a research team interpret data in the same way. When the research design calls for a reliability measure, studies can improve trustworthiness by explaining results in nonstatistical terms to preclude using mathematical language as a rhetorical device rather than a logical tool. Lucy Yardley argues that statistical reliability does not constitute objectivity, but rather an agreement to notice the same properties of the data. Lucy Yardley argues that statistical reliability does not constitute objectivity, but rather an agreement to notice the same properties of the data. Cynthia Franklin and Michelle Ballan noted that statistical reliability tests are uncommon in qualitative work:

> Although some qualitative researchers do calculate interrater reliability, most do not. Instead, qualitative researchers use different observers to check interpretations and to help them question differing observations, with a goal of achieving a higher continuity and dependability of observations across different settings and time periods.

For qualitative data—where the “instrument” is a human being, and phenomena are often unique, fleeting, or both—the terms **dependability, consistency, reproducibility, or confirmability** may be preferred. Credibility in studies framed in positionality requires explaining how the investigators are invested in the topic, how like or unlike participants they are, and in what ways bias could have shaped resulting knowledge claims.

There are many ways to convince readers that a study is rigorous or trustworthy. By closely examining how scholars explain and justify their methods, we can see more clearly the strengths and weaknesses of quantitative and qualitative work. Andrew Abbot presents research methods as elements in a game of rock-paper-scissors, in which each approach is superior on some aspect of rigor relative to another method: “Put any two studies using slightly different methods together, and one will seem to have a more effective method. We will then find that this method can be improved further by moving toward yet a third method.” Thus, a more detailed understanding of how LIS studies justify their methods and present their limitations can lead to developing more robust research in a rapidly changing field.
Conclusions

Methods sections are brief. It is difficult to include, in roughly four double-spaced pages, every consideration that went into a rigorous research project. The constraint is particularly binding for qualitative researchers, who usually need to display examples to establish the credibility of their analytic approach.34

Several groups within LIS can play a role in fostering more complete, clear, and logical presentations of qualitative methods. Professors of, and trainers in, research methods can help by shifting the methodological frame away from a zero-sum comparison of quantitative and qualitative markers of quality and toward a model of mutual critique between a range of interpretive and analytical approaches. Reviewers of journal submissions can help by encouraging investigators to reflect on such decisions and the potential implications for findings. Reviewers could also look for a wider set of justifications for, and limitations of, the methods used. Rather than default to quantitative standards of excellence, do investigators display a command of the qualitative methodology they chose? Journal editors can help by allowing more space for intense methodological awareness, perhaps in appendices or online supplements to avoid distracting from key findings. Institutions can help by providing policies and platforms for qualitative data sharing to make evidence available for independent examination35 and to promote “replication, reproduction, and assessment of empirically based qualitative analysis.”36

The tasks of explaining how qualitative data were gathered and in what ways they best respond to the research question are complicated. The challenge for analysts of qualitative data is to reduce an iterative and evolving process of months or years into a few cogent and persuasive sentences. The work of bringing order to a complex set of observations may leave much qualitative work open to imputing bias. To the extent that investigators are tempted to depict the research process as straightforward and predetermined, they deprive readers of participating in the journey toward understanding. Credibility is bolstered, not undermined, by revealing missteps, conflicts, and omissions and by explaining how investigators reconciled them.

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Appendix A

Survey Instrument

1. In your current professional position, are research activities expected of you?
   - Yes, I am primarily a researcher.
   - No, I am primarily a practitioner.
   - My current position balances research and practice.
   - I am not currently employed in a professional position.

2. What advanced degree(s) do you hold? (Check all that apply)
   - Master’s in Library/Information Science
   - MA or MS (Please specify discipline)
   - PhD (Please specify discipline)

3. Considering your entire research agenda, which approaches do you use?
   - I use primarily qualitative methods.
   - I use both qualitative and quantitative methods.
   - I use primarily quantitative methods.
   - My work on this article is the only study I have done.
   - Other, please explain: ____________________

4. What, if any, training have you had in qualitative methods? (Check all that apply)
   - Formal master’s degree LIS research methods course(s) that covered qualitative methods
   - Formal doctoral degree LIS research methods course(s) that covered qualitative methods
   - Formal master’s degree non-LIS course(s) (e.g., courses in other departments) that covered qualitative methods
   - Formal doctoral degree non-LIS course(s) (e.g., courses in other departments) that covered qualitative methods
   - Continuing education program(s) (e.g., courses, workshops, conference programs)
   - Staff development program(s) provided by your organization
   - Self-education activities (e.g., professional reading, online tutorial)
   - Training from a senior researcher as an assistant on a study
   - None of these
   - Other, please explain: ____________________

5. What, if any, research support did your institution or library provide for the study leading to the article listed? (Check all that apply)
   - Release time or sabbatical
   - Assistance from students
   - Travel funds
   - Research design consultant or statistical consultant
   - Software or equipment
   - Transcription service
6. For the article listed, which stage of the research process required the most effort for you or the research team?
   - Choosing a theoretical basis for the research
   - Designing the research instruments or techniques
   - Choosing a participant population or sample
   - Gaining approval from the Institutional Review Board
   - Recruiting participants
   - Gathering data
   - Analyzing data
   - Reporting findings
   - Other: ____________________

7. For the article listed, what level of Institutional Review Board review did the study receive?
   - Determination of nonhuman subjects research
   - Exempt review
   - Expedited review
   - Full review
   - Do not recall/not sure
   - Did not seek IRB approval
   - Other: ____________________

8. What, if any, modifications of the study did the IRB require before approving it? Please explain.

9. What was one key benefit of using qualitative methods to address the research question(s) for the article listed?

10. If you were to start the study again, what aspect of the research design would you change? Please explain.

11. What advice would you give a novice researcher beginning a study using qualitative methods?

12. Please provide the name of a researcher or the title of a book or article that inspired you to use qualitative methods or that influenced your qualitative approach.
Appendix B

Methodological Reflections

The systematic review of research methods sections and studying the methodological references cited led to intense reflection on my own research process. I became convinced that transparency about my social location and perspective and about my missteps would increase the credibility of the current study. Such disclosure, however, risked distracting readers from the key findings. Here I state my standpoint (also known as positionality) and what aspects of the study I would change if I were to start over.

Researcher’s Standpoint

Qualitative data require interpretation, which occurs through the lens of previous experience. For readers to assess my interpretation of the methods sections, it is helpful to compare my social location to the authors of the study. Like 58 percent of the authors in the study, I am a practicing librarian. Like 50 percent of the survey respondents, I balance research and practice in my current position as a tenure-track assistant professor. Like 52 percent of authors in the study, I work at a doctoral-granting university (highest research activity). Like 87 percent of researcher-librarian respondents, I hold an MALIS (master’s in library science) degree, and like 27 percent of them, I also hold a PhD (in sociology). I expected to find differences between the perspectives of academics and practitioners because my doctoral training included both quantitative and qualitative methods, but my MALIS program did not require a research methods course.

I use primarily qualitative methods in my scholarship, like 36 percent of survey participants. I receive more support from my institution than most survey participants, including release time for research, assistance from students, travel funds, and software. In addition, I benefit from highly committed and supportive colleagues who are driven to improve the rigor of research at our institution and in the profession. I am grateful for their contributions.

What I Would Do Differently

Rather than selecting a sample, I hoped to gather the complete population of studies using qualitative data. This proved daunting. The two databases do not fully cover LIS literature. For example, abstracts of some relevant studies might not have included the search terms, and I might have inadvertently omitted studies during long hours of screening. Other studies noted in the literature review made different selection decisions, making it impossible to directly compare results. A deeper contribution might have resulted from asking other authors to share the citation lists for their studies for direct comparison. This thought led me to share the citations for the articles studied here in figshare, a data sharing platform, to allow others to build on or challenge these findings.

One limitation of recruiting for the survey was a possible lack of clarity in the e-mail invitation. Some members of the survey population literally “wrote the book” on research methods and may have been taken aback to be contacted about their work so impersonally. A pilot of the invitation and survey with a proxy group, such as authors with studies accepted for publication in 2016, might have prevented this issue.
Notes

2. Ibid., 255.
32. Franklin and Ballan, “Reliability and Validity in Qualitative Research,” 274.