

# Remote Reference in U.S. Public Library Practice and LIS Education

Lorri Mon, Eileen G. Abels, Denise E. Agosto, Andrea Japzon,  
Linda Most, Mike Masnik and Jeanne Hamann

The state of remote reference services in the United States was assessed by surveying remote reference availability at 100 U.S. public libraries, examining remote reference in the syllabi of American Library Association (ALA)-accredited library and information science (LIS) courses in the U.S., and analyzing national competencies and guidelines. Findings indicated that the telephone was the most common medium in use for remote reference services at public libraries, followed by e-mail and chat. In teaching, however, syllabi at LIS programs addressed digital remote reference media far more often than the telephone. Reference standards and guidelines primarily focused on general practices applicable to both remote and face-to-face reference work, rather than on specifics relevant to differing remote reference media types. Included in this study are recommendations to address this apparent disconnect among reference practices, teaching, and professional guidelines.

## Introduction

For more than 50 years, U.S. public libraries have provided remote reference services using a variety of information technologies, from correspondence mail in the 1940s and earlier<sup>1</sup> to telephone reference in the 1930s to 1950s<sup>2</sup> and reference by teletype in the 1960s.<sup>3</sup> In the 1990s, digital information technologies brought experimentation with remote reference via computer video conferencing,<sup>4</sup> MOO (online text-based virtual environments),<sup>5</sup> e-mail,<sup>6</sup> and beginning in 2000, chat and instant messaging.<sup>7</sup> By 2001, 48 million Americans were estimated to have used instant messaging and 100 million were e-mail users.<sup>8</sup> By 2005 there were an estimated 134 million American cell phone users, 34 million of whom had sent text messages.<sup>9</sup> Considering the popularity of these various digital media, it is not surprising that libraries began integrating them into their reference services.

There are indications that new generations of users will expect continued innovation in remote reference services from public libraries.<sup>10</sup> Abram and Luther described young library users born since 1980 as accustomed to 24-hour information-seeking via computers, PDAs, and cell phone text-messaging, and advised librarians to “explore IM or other

### About the Authors

*Lorri Mon* is an assistant professor in the College of Information at Florida State University (lmon@ci.fsu.edu). *Eileen G. Abels* (eabels@drexel.edu) is the director of the master's program and an associate professor, *Denise E. Agosto* (Denise.Agosto@drexel.edu) is an associate professor, and *Andrea Japzon* (andrea.copeland.japzon@drexel.edu) is a doctoral candidate in the College of Information Science and Technology, Drexel University. *Linda Most* is a doctoral student in the College of Information, Florida State University (lmost@fsu.edu).

*Michael D. Masnik* is a recent graduate of Drexel University's Library and Information Science Program (MDMasnik@AOL.com). *Jeanne Hamann* is the head of Reserves for Hagerty Library at Drexel University (jmh59@drexel.edu).  
*Ms. submitted 03/2008; accepted 07/2008; revised 07/2008.*

communication technologies that allow us to deliver good quality, interactive, remote reference services,"<sup>11</sup> adding that "over 60% of workplaces have enabled IM for business use, sometimes at the demand of their newest employees."<sup>12</sup>

Current and future students graduating from LIS programs may be employed in libraries offering not only traditional face-to-face reference services, but also remote reference services requiring skills in using a variety of different media types. It is unclear, however, whether LIS reference curricula are preparing students not only to be adept in face-to-face reference services, but also to be ready to assist employers with a variety of remote reference services that patrons may expect and demand of libraries in the 21st century.

With these issues in mind, this study sought to address three research questions:

- With what frequency are remote reference services offered in U.S. public libraries, and do the remote reference services offered differ with the size of the libraries?
- To what extent are remote reference skills and concepts covered in LIS graduate education programs in the U.S.?
- To what extent do professional standards and guidelines address remote reference, and what behaviors and skills are needed for the successful provision of remote reference, as indicated in the guidelines?

The study employed multiple methods to address these three questions. First, reference services offered in a sample of 100 highly-ranked public libraries were examined to better understand the types of remote reference services that students may be expected to provide after graduating from LIS programs. Then, course syllabi of 40 LIS graduate programs were examined for the extent to which the remote reference media types were reflected in the teaching of students in LIS programs. Lastly, nine professional standards and guidelines were studied to identify recom-

mended best practices for remote reference and to identify the skills needed to prepare students for the successful provision of remote reference services.

### **Remote Reference in Practice**

To determine the types and extent of remote reference services offered in U.S. public libraries, the remote reference services offered by the top 100 public libraries included in Hennen's American Public Library Ratings (HAPLR) (<http://www.haplr-index.com/>) were examined.<sup>13</sup> While this sample may not be representative of all public libraries, it has the advantage of grouping the libraries into ten population categories ranging from zero to over 500,000, enabling an analysis based on the size of communities served. The initial data gathering involved an analysis of the library Web sites to determine if remote reference services were offered by telephone, e-mail, and/or chat/IM. In addition, data were gathered related to the hours of service availability for each, the turnaround time if indicated, and the reliance on consortia when offering remote reference services. Ninety-six percent of the public libraries in this sample had Web sites; four of the smaller libraries, in the 0–1,000 population range, did not. For this reason, and when the information on the Web sites was vague or unavailable, additional data were gathered by telephone. Table 1 summarizes the findings related to remote reference offerings in public libraries.

All 100 libraries in the sample provided telephone reference services. Interestingly, only 40% of the libraries provided clear notification of the availability of telephone reference, including a telephone number, on their Web sites. Through further investigation, the researchers discovered that the other 60% of the public libraries did in fact offer telephone reference but did not mention the availability of this service on their Web sites. Determining why libraries are not advertising their telephone reference services on their Web sites will require additional research as this was not explored during this study. Size may be a factor in advertising the telephone reference service, but again, more data would be necessary to draw any conclusions. Anecdotal evidence shows that many business and government websites either do not include telephone numbers or do not make their telephone numbers easily accessible, perhaps due to institutional preferences for e-mail communication.

Eighty-three percent of the libraries offered e-mail reference services. While fewer of the smaller libraries offered e-mail reference, some of the larger libraries did not offer this service either. That is, size of the library does not seem to be related to offering e-mail reference service.

Chat reference service was offered by 49% of the libraries. Size of the library seems to be related to offering chat reference service; none of the libraries in the 2,500 population range or smaller offered chat service. Eighty-two percent of those libraries that do offer a chat service provided service on a 24 × 7 basis.

**Table 1**  
Remote Reference Services Offered in 100 Public Libraries.

| Population<br>(in 1,000) | Web site %<br>(#) | Chat %<br>(#) | 24 x 7 Chat<br>% (#)* | E-mail<br>% (#) | Telephone<br>Reference<br>% (#) | Reference Telephone<br>Number on Web site<br>% (#) |
|--------------------------|-------------------|---------------|-----------------------|-----------------|---------------------------------|--|
| 500                      | 100 (10)          | 90 (9)        | 100 (10)              | 100 (10)        | 100 (10)                        | 90 (9)   |
| 250                      | 100 (10)          | 60 (6)        | 83 (5)                | 100 (10)        | 100 (10)                        | 70 (7)   |
| 100                      | 100 (10)          | 70 (7)        | 71 (5)                | 90 (9)          | 100 (10)                        | 70 (7)   |
| 50                       | 100 (10)          | 70 (7)        | 86 (6)                | 80 (8)          | 100 (10)                        | 60 (6)   |
| 25                       | 100 (10)          | 80 (8)        | 75 (6)                | 100 (10)        | 100 (10)                        | 60 (6)   |
| 10                       | 100 (10)          | 60 (6)        | 83 (5)                | 70 (7)          | 100 (10)                        | 10 (1)   |
| 5                        | 100 (10)          | 60 (6)        | 67 (4)                | 70 (7)          | 100 (10)                        | 0 (0)  |
| 2.5                      | 100 (10)          | 0 (0)         | 0 (0)                 | 100 (10)        | 100 (10)                        | 20 (2)   |
| 1                        | 90 (9)            | 0 (0)         | 0 (0)                 | 70 (7)          | 100 (10)                        | 20 (2)   |
| 0                        | 70 (7)            | 0 (0)         | 0 (0)                 | 50 (5)          | 100 (10)                        | 0 (0)  |

N= 100.

\*% calculated based on number of libraries that offer chat service.

## Remote Reference in LIS Education

To explore teaching of remote reference in LIS education, reference course syllabi available online at the Web sites of ALA-accredited LIS Masters' programs at U.S. universities were systematically collected from two primary sources:

- the ALA Web page of accredited LIS programs, available at <http://www.ala.org/ala/accreditation/lisdirb/Alphaaccred.htm><sup>14</sup>, and
- the Digital Reference Education Initiative (DREI) online repository of publicly-available digital reference syllabi, now defunct but originally available at <http://drei.syr.edu>.<sup>15</sup>

WebWhacker software, which follows links and retrieves file types including Web pages, pdfs, and documents, was used to automatically download syllabi. The resulting sample from 40 of the 49 U.S.-based ALA-accredited programs included 180 Web-based LIS course syllabi related to 'reference services' or 'digital libraries.' Over two-thirds of courses provided basic reference instruction for LIS students and had course titles with variations on the words "Information Services," "Information Sources," "Reference Sources," and "Reference Services." Among the remaining courses, fifteen focused on "digital libraries" while the others included advanced reference and special topics courses.

Syllabi were downloaded during November 2006 to February 2007 and had course dates of 2001 to 2007. Among the 40 LIS programs studied, 34 included syllabi dated 2005–2007. The course syllabi were analyzed to examine how remote reference was taught across LIS programs in the U.S., including types of remote reference media, assignments used in conveying remote reference skills, and inclusion of remote reference in course bibliographies.

## Remote Reference Media Types in Syllabi

Digital reference media constituted the primary focus of remote reference in the classroom. Across the 40 LIS programs in this study, the telephone was less prevalent as a remote reference media type in course syllabi. Only seven of the LIS programs specifically mentioned telephone reference services in course syllabi whereas digital remote reference services were mentioned in syllabi of 35 LIS programs, as shown in Table 2.

New and emerging remote reference media types appeared in some of the syllabi, including instant messaging, courseware, and virtual worlds. Eight LIS programs had syllabi explicitly mentioning instant messaging; two mentioned virtual worlds such as Active Worlds and Second Life; and one described use of the online WebCT courseware as a digital reference medium.

**Table 2**  
**Remote Reference Media Types in Syllabi of LIS Programs.**

| <b>Media Type</b>                   | <b>Number of Programs (n = 40)</b> |
|-------------------------------------|------------------------------------|
| Digital/Virtual (e.g. chat, e-mail) | 35                                 |
| Instant messaging                   | 8                                  |
| Online courseware                   | 1                                  |
| Virtual worlds                      | 2                                  |
| Telephone                           | 7                                  |

### Remote Reference Assignments

Assignments involving remote reference were observed to fall into three general categories:

- *direct experiences*, in which students answered remote reference questions from real users or asked questions remotely of real librarians;
- *simulated experiences*, in which students enacted remote reference scenarios through roleplay;
- *indirect experiences*, in which students explored remote reference through readings, class discussions, researching and writing papers, undertaking projects and presentations, and listening to speakers.

In assignments with direct question-answering experiences for students, e-mail was the most frequently used remote reference medium across the LIS programs. Eleven LIS programs used e-mail direct answering assignments in giving students hands-on experience answering questions from real users. The Internet Public Library<sup>16</sup> was the most commonly observed venue with seven LIS programs participating, followed by the now-defunct Virtual Reference Desk<sup>17</sup> used by four LIS programs, and the former Stumpers-L discussion list<sup>18</sup> used by one LIS program.

Direct-asking assignments, used by nine LIS programs in giving students the experience of asking questions and interacting with real librarians, were available across a wider range of combinations of remote reference media types including seven LIS programs offering a chat alternative, three offering instant messaging, three specifying e-mail, two offering telephone experiences, and one LIS program directing students to visit libraries in the virtual world of Second Life.

Role-playing assignments used by six LIS programs provided students with simulated experiences in remote reference through enacting the roles of patrons or librarians with classmates or the instructor. Media types varied in role-playing, and multiple mode choices were sometimes assigned to give students a variety of remote reference experiences. E-mail and chat were the major mode types in roleplays with four LIS programs assigning

roleplays in e-mail, three assigning chat roleplays; one LIS program utilized a WebCT courseware roleplaying activity.

Indirect assignments observed in course syllabi included learning about remote reference through participating in class discussions, listening to guest speakers, researching and writing papers or creating projects about remote reference, undertaking a 'library scan' of remote reference services offered, and/or subscribing to a professional discussion list with coverage of remote reference services. However, across all of the LIS programs, the most commonly used indirect learning method shown in syllabi was assigning students to read books or articles about remote reference.

### Remote Reference in Course Readings

Among the 40 LIS programs, 31 had course syllabi listing readings on remote reference. Two remote reference readings in particular were listed more often than any others across the LIS programs as seen in Table 3.

All of the most commonly assigned readings for remote reference focus primarily on digital remote reference, which was also typical of the focus across the entire corpus of course readings. Among the 117 readings about remote reference on course syllabi, 98 (or about 83.8%) had online-focused words in their titles including "digital," "virtual," "electronic," "online," "chat," "e-mail," "instant messaging," "Internet," "cyberspace," "Second Life," and the names of specific digital reference services such as "Internet Public Library" or "Q and A NJ." Only two readings in course bibliographies focused on telephone reference, both of which were assigned within syllabi at only one LIS program.<sup>19</sup>

**Table 3**  
Most Frequently Assigned Remote Reference Readings among LIS Programs.

| # of LIS Programs | Remote Reference Readings Assigned on Course Syllabi  |
|-------------------|---|
| 11                | Janes, Joseph W. <i>Introduction to Reference Work in the Digital Age</i> . New York: Neal-Schumann, 2003.  |
| 10                | Straw, Joseph E. "A Virtual Understanding: The Reference Interview and Question Negotiation in a Digital Age." <i>Reference and User Services Quarterly</i> , 39, no.4 (2000): 365-79.  |
| 5                 | Janes, Joseph W. and Joanne Silverstein. "Question Negotiation and the Technological Environment." <i>D-Lib Magazine</i> , February 2003. <a href="http://www.dlib.org/dlib/february03/janes/02janes.html">http://www.dlib.org/dlib/february03/janes/02janes.html</a> . |
| 5                 | Ronan, Jana S. <i>Chat Reference: A Guide to Live Virtual Reference Services</i> . Littleton, CO: Libraries Unlimited, 2003.  |
| 5                 | Ronan, Jana S. "The Reference Interview Online." <i>Reference and User Services Quarterly</i> 43, no. 1 (2003): 43-47.  |
| 5                 | Reference and User Services Association (RUSA). "Guidelines for Implementing and Maintaining Virtual Reference Services." <i>Reference and User Services Quarterly</i> 44, no. 1 (2004): 9-13.  |

## Remote Reference in Professional Guidelines

Professional guidelines for best practices can form a bridge between the teaching and practice of information services. The third research question focused on analysis of the reference standards and guidelines: “To what extent do professional standards and guidelines address remote reference, and what behaviors and skills are needed for the successful provision of remote reference, as indicated in the guidelines?” Thus the third phase of the research involved the examination of professional standards and guidelines to determine the extent of remote reference coverage and to identify specific behaviors and skills suggested for the successful provision of remote reference.

### Identifying the Standards and Guidelines

The first task in this phase of the project involved identifying the documents for analysis. National professional association and association subdivision Web sites were searched for professional standards and guidelines for reference and other public services. Nine relevant documents were identified:

1. *Competencies for Librarians Serving Children in Public Libraries* (Association for Library Service to Children—ALSC)<sup>20</sup>
2. *Roles and Responsibilities of the School Library Media Specialist* (American Association of School Librarians—AASL)<sup>21</sup>
3. *Professional Competencies for Reference and User Services Librarians* (Reference and User Services Association—RUSA)<sup>22</sup>
4. *Guidelines for Behavioral Performance of Reference and Information Service Providers* (Reference and User Services Association—RUSA)<sup>23</sup>
5. *Guidelines for Maintaining and Implementing Virtual Reference Services* (Reference and User Services Association—RUSA)<sup>24</sup>
6. *Competencies for Librarians Serving Young Adults* (Young Adult Librarians Service Association—YALSA)<sup>25</sup>
7. *Competencies for Information Professionals of the 21st Century* (Special Libraries Association—SLA)<sup>26</sup>
8. *Health Information Knowledge and Skills* (Medical Library Association—MLA)<sup>27</sup>
9. *Competencies of Law Librarianship* (American Association of Law Librarians—AALL)<sup>28</sup>

Sections within these nine documents relating to reference or other public service operations were identified. Analysis focused on these sections, which together totaled 67 pages of text.



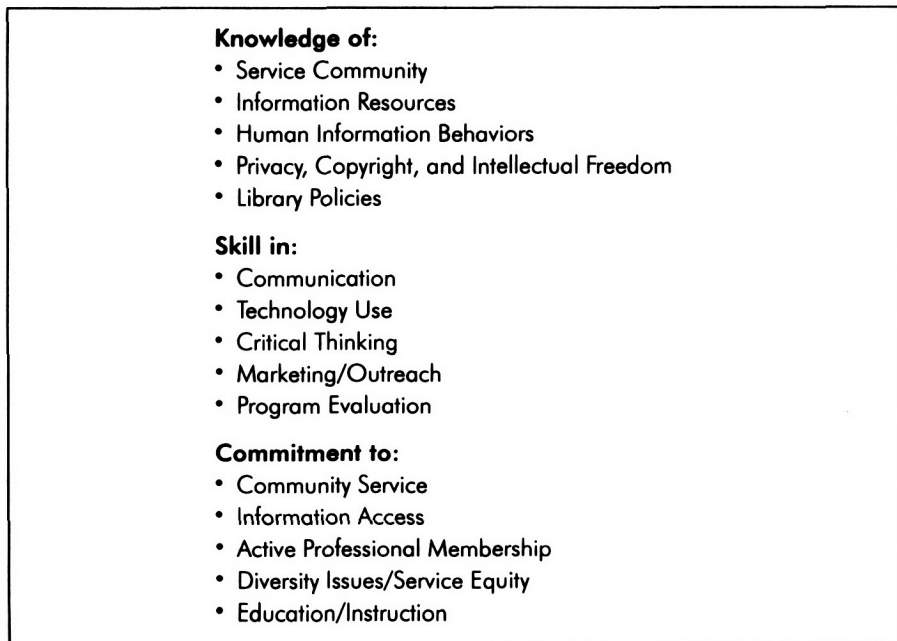
## Analyzing the Guidelines

The goal of analyzing the guidelines was to determine recommended best practices for reference services in remote contexts. As the guidelines took the form of written documents, the researchers used the constant comparative method for data analysis to search for patterns recurring across the various guidelines.<sup>29</sup> The constant comparative method entails iterative readings and reorganization of prose data leading to the development of a coding scheme for theory, model, and/or conclusion building. It is the most common method for analyzing qualitative data.

Analysis of the guidelines resulted in a coding scheme comprised of 15 codes, each describing a specific area recommended for best reference and public service practice. In Figure 1, the various components of the coding scheme (the 15 bulleted points) are shown arranged into a model of core concepts of reference and public service operations. The model includes three main subdivisions: knowledge, skills, and commitment, with five specific areas under each main category.

The analysis showed surprisingly little content devoted specifically to remote reference service. As a result, the only area of the model clearly tied to technology or digital resources is "technology use," although "information resources" subsumes information in both print and digital formats. This reflects the minimal discussion of services conducted in digital and

**Figure 5**  
**Core Concepts of Reference and Public Service Operations.**



other remote environments across most of the guidelines/competencies analyzed.

For example, SLA's "Competencies for Information Professionals of the 21st Century" (2003) mentions that information "resources may be in any media or format," but specific skills and knowledge for services via remote means are not discussed. In other words, most of the guidelines touched on *digital resources*, but they rarely covered *digital environments* as places where information services are taking place in today's libraries.

There are at least two reasonable interpretations for this widespread omission. First, it may indicate that the basic guiding concepts and best practices for information services conducted in digital environments are largely the same as those required for service excellence in face-to-face settings. Indeed, the various components of the coding scheme are applicable to both face-to-face and remote reference settings.

Alternatively, it might be that the relative recency of services provided in digital environments might indicate that full standards and guidelines for digital reference work are yet to be developed. If this is the case, then there might be additional areas of knowledge, skills, and/or commitment necessary for effective digital reference services.

Looking at the individual documents analyzed, each mentioned the existence of digital resources, but only two provided any insight into special skills or knowledge needed for remote reference work. These two were RUSA's "Guidelines for Behavioral Performance of Reference and Information Service Providers" (2004) and RUSA's "Guidelines for Maintaining and Implementing Virtual Reference Services" (2004).

"Guidelines for Behavioral Performance of Reference and Information Service Providers" (2004) listed recommended best practices divided according to the type of service environment: "general," "in person," or "remote." Specific recommendations for remote reference are fewer in number than for in-person reference. They included the importance of: linking to digital reference portals from libraries' homepages, timely responses to patrons' queries, gathering additional information beyond initial queries, providing guidance for navigating library resources, and suggesting follow-up with the library if necessary. It should be noted that each of these were also recommended practices for face-to-face reference service.

It is clear from the document name that "Guidelines for Maintaining and Implementing Virtual Reference Services" (2004) was intended to focus on e-mail, chat, and other digital reference formats. However, most of the recommendations listed duplicated those commonly suggested for face-to-face reference. Notable exceptions included the importance of: understanding communication difficulties in online environments, carefully coordinating collaborative virtual reference, and considering patrons' possible technology infrastructure limitations when choosing digital reference software.

Changes in standards and guidelines often lag behind changes in prac-

tice, which might explain the limited focus on unique skills and knowledge needed for effective remote reference service. In contrast, teaching curricula can change more quickly to reflect the changing world of practice, yet this study shows a disconnect between practice and teaching as well between practice and the guidelines. It is possible that classroom time constraints and other practical roadblocks to curriculum revision have prevented LIS reference courses from reflecting the shift to a wider array of reference media. Nonetheless, this study suggests that both reference guidelines and curriculum should be reviewed and updated to more accurately reflect actual levels of reference media usage.

Looking beyond professional association standards and guidelines, the now-defunct Digital Reference Education Initiative (DREI) also created "Rubrics for Digital Reference Service Providers."<sup>30</sup> These included ten main competencies: computer literacy, digital reference software, digital reference encountering or interview, digital information resources creation and use, evaluation of services, policy and procedures, instructional role, triage and collaboration, digital reference community, and knowledge-base acquisition and use. Specific skills were provided for each of the 10 competencies. As is the case with the RUSA guidelines for virtual reference, much of the content of the DREI recommendations echoed recommended best practices for face-to-face reference work; only two of the ten sets of competencies and skills (computer literacy and digital reference software) were specific to digital environments.

To date, the DREI rubrics have been the most comprehensive set of recommendations for best remote reference practices. Creating recommendations for remote reference service beyond those found within the various guidelines analyzed is beyond the scope of this study, but it is an important avenue for future examination.

There was even less coverage of telephone reference within the guidelines examined. Of the 9 documents, only 3 contained any reference whatsoever to telephone-based services, and all 3 of these were RUSA documents. "Professional Competencies for Reference and User Services Librarians" (2003) said simply that:

"A wide range of information services is provided to the users through a large and growing set of delivery channels. There are print collections visited on site, print materials that are delivered to the user, electronic collections delivered over the Internet, information services provided through in-person, telephone, fax, e-mail, and web-based virtual sessions. In all these services, the goal is to make the resources of the library available to the user in a way and a format that meets the user's needs."<sup>31</sup>

"Guidelines for Behavioral Performance of Reference and Information Service Providers" (2004) included telephone reference as a form of remote reference. However, the only time telephone-based service was mentioned was the suggestion to place "contact information for chat, e-mail, telephone, and other services in prominent locations, to make them obvious and welcoming to patrons."

Finally, "Guidelines for Maintaining and Implementing Virtual Reference Services" (2004) mentioned telephone services briefly twice. The first instance excluded reference query follow-up via telephone, fax, in-person and regular mail from being "considered virtual." The second instance recommended that the "Integration of virtual reference into the mainstream of reference services implies that all services (in-person, telephone, and virtual) will be supported at a level to ensure quality service."

## Discussion, Recommendations, and Conclusions

Although the telephone was observed in this study to be the most commonly used remote reference medium in U.S. public libraries regardless of size, it appears to be largely overlooked in both syllabi of LIS reference courses and in reference standards and guidelines. When compared with the findings of this study regarding widespread availability of telephone reference services in U.S. public libraries, it is notable that only two readings in course syllabi reviewed in the study focused on telephone reference.<sup>32</sup> While it is possible that LIS instructors are mentioning the telephone as part of general classroom presentations and discussions not reflected in syllabi, the overall lack of readings or assignments related to telephone reference services was striking, particularly as compared to the readings and assignments shown in syllabi for e-mail and chat reference services. Given the popularity of cell phones, LIS educators should explore ways of incorporating telephone reference into discussions and assignments.

Just as telephone reference seems to be largely overlooked in the classroom, it stands within the professional guidelines and competencies as the forgotten step-child of face-to-face reference and other forms of remote reference. This finding is consistent with other recent telephone reference studies.<sup>33</sup> Much of the attention given to remote reference in syllabi and professional guidelines focused on digital modes of remote reference such as chat and e-mail, rather than on telephone reference.

E-mail reference was the second most commonly found remote reference service in public libraries after telephone reference. The extent to which e-mail reference was explicitly covered in LIS programs was difficult to ascertain as some syllabi did not differentiate among e-mail, chat, or instant messaging, referring instead to "digital reference." Although one-fourth of the LIS programs in this study had utilized assignments in which LIS graduate students "learned by doing" in answering e-mail remote reference questions from real users, available venues for these direct remote reference learning experiences have been decreasing. Four LIS programs had used the Virtual Reference Desk as a training site, but it is now no longer available at Syracuse University. One had used the Stumpers list, which is now hosted by Project Gutenberg instead of Dominican University.<sup>34</sup> The Internet Public Library, used by seven of the LIS programs and now hosted at Drexel University, is the last of these direct remote reference services

still being operated as a venue for shared graduate student teaching and learning across LIS programs. The prevalence of e-mail services in public libraries found in this study suggests that coverage of e-mail remote reference in LIS reference courses continues to be important.

Approximately 87% of the LIS programs in this study mentioned digital reference in their syllabi, including chat and e-mail reference, and new technologies such as virtual worlds, instant messaging, and courseware are also appearing in syllabi. Today's LIS educators face the challenge of balancing coverage of remote reference technologies when new technologies, such as virtual worlds, are appearing in addition to rather than replacing older technologies such as the telephone in reference service provision.

Few specific details were given in LIS professional guidelines on how to adapt reference practices to the constraints and affordances of differing remote reference media types. Guidelines tended to offer generalized guidance designed to work across all media types rather than specifics for modes such as chat, e-mail, instant messaging, and telephone. However, there have been calls for training to address the specific learning needs of different modes. In 2004, Harris emphasized hands-on remote reference training to prepare LIS graduate students for delivering chat remote reference services, and in 2007, Agosto stressed the importance of LIS graduate teaching in citing sources to improve telephone remote reference services.<sup>35</sup> Professional associations are encouraged to revisit their guidelines for remote reference practice to better reflect the skills and knowledge associated with different remote reference media. This will be critical as technologies such as cell phones, PDAs, text messaging, e-mail, chat, instant messaging, Web-based message boards, virtual worlds, and social networking sites are explored and integrated into library remote reference services.

### **Acknowledgments**

This research was made possible by funding through the ALISE 2007 Research Grant Competition Award.

### **References and Notes**

1. Selma Levin, "Reference Work by Mail Order: A Day in the Life of a Branch Reference Librarian," *Wilson Library Bulletin* 21 (1947): 603-604; and Sara Ryan, "Reference Service for the Internet Community: A Case Study of the Internet Public Library Reference Division," *Library and Information Science Research* 18 (1996): 241-259.
2. Rosemarie Riechel, *Improving Telephone Information and Reference Service in Public Libraries*. (Hamden, CT: Library Professional Publications, 1987); Florence M. Gifford, "Telephone Reference Service," *Wilson Library Bulletin* (April 1943): 630-632; and Ryan, "'Reference Service for the Internet Community,'" 244.
3. Herbert Poole, "Teletypewriters in Libraries: A State of the Art Report," *College and Research Libraries* (July 1966): 283-290; and Ryan, "Reference Service for the Internet Community," 247.
4. Kathleen M. Folger, "The Virtual Librarian: Using Desktop Videoconferencing to Provide

- Interactive Reference Assistance," paper presented at the ACRL National Conference, 1997. <http://www.ala.org/ala/acrlbucket/nashville1997pap/folger.htm>.
5. Elizabeth Shaw, "Real Time Reference in a MOO: Promise and Problems." (April 1996), Internet Public Library, <http://www.ipl.org/div/iplhist/moo.html>.
  6. Beth A. Garnsey and Ronald R. Powell, "Electronic Mail Reference Services in the Public Library," *Reference and User Services Quarterly* 39, no.3, (2000): 245–254; also Nancy O'Neill, "E-mail Reference Service in the Public Library: A Virtual Necessity," *Public Libraries* 38 no.5, (Sep/Oct 1999): 302–303,305; and Joseph Janes, "Digital Reference Services in Public and Academic Libraries," in *Evaluating Networked Information Services: Techniques, Policy and Issues*, ed. Charles R. McClure and John Carlo Bertot, ASIST Monograph Series (Medford, NJ: Information Today, Inc., 2001), 175–195.
  7. Stephen Francoeur, "An Analytical Survey of Chat Reference Services," *Reference Services Review* 29, no.3 (2001): 189–203; Steve Coffman and Linda Arret, "To Chat Or Not to Chat—Taking Another Look at Virtual Reference, Part 1," *Searcher* 12, no.7 (July/August 2004). [http://www.infotoday.com/searcher/jul04/arret\\_coffman.shtml](http://www.infotoday.com/searcher/jul04/arret_coffman.shtml)
  8. John B. Horrigan and Lee Rainie, "Getting Serious Online," *Pew Internet and American Life Project* (2002): <http://www.pewinternet.org/reports/toc.asp?Report=55>
  9. Pew Internet and American Life Project, "34 Million American Adults Send Text Messages on their Cell Phones," *Pew Internet and American Life Project*, (March 14, 2005): [http://www.pewinternet.org/press\\_release.asp?r=99](http://www.pewinternet.org/press_release.asp?r=99).
  10. Terminology varies in the literature, but within this article, the term "digital reference" will include chat, e-mail, and IM reference and will subsume virtual reference forms.
  11. Stephen Abram and Judy Luther, "Born with the Chip," *Library Journal* 129, no.8, (2004): 34–37.
  12. Ibid, 37.
  13. Thomas J. Hennen Jr., "Hennen's American Public Library Ratings 2006," *American Libraries* 37, no.10, (November 2006): 40–42.
  14. American Library Association, "Alphabetical List of Institutions with ALA-Accredited Programs," (2008). <http://www.ala.org/ala/accreditation/lisdirb/Alphaaccred.cfm>.
  15. See Digital Reference Education Initiative (DREI), Internet Archive, (May 16, 2007). <http://web.archive.org/web/20070516085446/http://drei.syr.edu/>; also Digital Reference Education Initiative (DREI), "Rubrics for Digital Reference Service Providers," Virtual Reference Desk, Internet Archive, (September 3, 2004). <http://web.archive.org/web/20070219074548/drei.syr.edu/pdf/DREICompetenciesDraft092004.pdf>.
  16. Internet Public Library (<http://www.ipl.org>) was formerly operated by the University of Michigan and is now hosted at Drexel University with management by a consortium of LIS schools, supported with a grant from the Institute of Museum and Library Services.
  17. Virtual Reference Desk (<http://vrd.org/>) was formerly operated by Syracuse University.
  18. Stumpers-L (<http://www.project-wombat.org/>) was formerly operated by Dominican University and is now hosted by Project Gutenberg.
  19. Frank R. Allen and Rita H. Smith. "A Survey of Telephone Inquiries: Case Study and Operational Impact in an Academic Library Reference Department." RQ 32, no.3 (Spring 1993): 382–391 and Debra Tour, "Quest Line (Telephone Reference)," *Public Libraries*, (July/August 1998): 256–258.
  20. Association For Library Service to Children (ALSC), "Competencies for Librarians Serving Children in Public Libraries," American Library Association (1999): <http://www.ala.org/ala/alsc/alscresources/forlibrarians/professionaldev/competencies.htm>.
  21. American Association of School Librarians (AASL), "Information Power: Building Partnerships for Learning, Roles and Responsibilities of the School Library Media Specialist," American Library Association, (1998): <http://www.ala.org/aaslTemplate.cfm?Section=informationpower&Template=/ContentManagement/ContentDisplay.cfm&ContentID=19930>.

22. Reference and User Services Association (RUSA), "Professional Competencies for Reference and User Services Librarians," American Library Association, (January 26, 2003): <http://www.ala.org/ala/rusa/protocols/referenceguide/professional.cfm>.
23. Reference and User Services Association (RUSA), "Guidelines for Behavioral Performance of Reference and Information Service Providers," American Library Association, (June 2004): <http://www.ala.org/ala/rusa/protocols/referenceguide/guidelinesbehavioral.cfm>.
24. Reference and User Services Association (RUSA), "Guidelines for Implementing and Maintaining Virtual Reference Services," American Library Association, (June 2004): <http://www.ala.org/ala/rusa/protocols/referenceguide/virtrefguidelines.cfm>.
25. Young Adult Library Services Association (YALSA), "Young Adults Deserve the Best: Competencies for Librarians Serving Youth," American Library Association, (October 2003). <http://www.ala.org/ala/yalsa/profdev/yacompetencies/competencies.cfm>.
26. Special Libraries Association (SLA), "Competencies for Information Professionals of the 21st Century," (June 2003): <http://www.sla.org/content/learn/comp2003/index.cfm>.
27. Medical Library Association, "Platform for Change: Health Information Science Knowledge and Skills," (July 13, 2007). <https://www.mlanet.org/education/platform/skills.html>.
28. American Association of Law Libraries (AALL), "Competencies of Law Librarianship," (March 2001): <http://www.aallnet.org/prodev/competencies.asp>.
29. Barney Glaser and Anselm L. Strauss. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. (Hawthorne, NY: Aldine de Gruyter, 1967), and Yvonna S. Lincoln and Egon G. Guba, *Naturalistic Inquiry*. (Beverly Hills, CA: Sage Publications, 1985).
30. Digital Reference Education Initiative (DREI), "Rubrics for Digital Reference Service Providers."
31. Reference and User Services Association (RUSA), "Professional Competencies for Reference and User Services Librarians."
32. Frank R. Allen and Rita H. Smith. "A Survey of Telephone Inquiries: Case Study and Operational Impact in an Academic Library Reference Department." *RQ* 32, no.3 (Spring 1993): 382-391 and Debra Tour, "Quest Line (Telephone Reference)." *Public Libraries*, (July/August 1998): 256-258.
33. Denise E. Agosto and Holly Anderton, "Whatever Happened to 'Always Cite the Source'? A Study of Source Citing and Other Issues Related to Telephone Reference," *Reference and User Services Quarterly* 47 no.1 (Fall 2007): 44-54.
34. See Project Wombat at <http://www.project.wombat.org>.
35. Lydia Eato Harris, "Software is not Enough: Teaching and Training Digital Reference Librarians" in R. David Lankes et al., eds. *The Virtual Reference Experience: Integrating Theory into Practice*. (NY: Neal-Schuman, 2004); Denise E. Agosto and Holly Anderton, "Whatever Happened to 'Always Cite the Source'?", 52.