



# SEEKING SYNCHRONICITY:

REVELATIONS AND RECOMMENDATIONS FOR VIRTUAL REFERENCE

Lynn Silipigni Connaway, Ph.D.

Senior Research Scientist, OCLC Research

Marie L. Radford, Ph. D.

Associate Professor, School of Communication & Information,  
Rutgers, The State University of New Jersey



A publication of OCLC Research

## Seeking Synchronicity: Revelations and Recommendations for Virtual Reference

Lynn Silipigni Connaway, Ph.D. and Marie L. Radford, Ph.D.

© 2011 OCLC Online Computer Library Center, Inc.

Reuse of this document is permitted as long as it is consistent with the terms of the Creative Commons Attribution-Noncommercial-Share Alike 3.0 (USA) license (CC-BY-NC-SA):

<http://creativecommons.org/licenses/by-nc-sa/3.0/>.

June 2011

OCLC Research  
Dublin, Ohio 43017 USA  
[www.oclc.org](http://www.oclc.org)

ISBN: 1-55653-427-2  
978-1-55653-427-0

OCLC (WorldCat): 729278503

Please direct correspondence to:

Lynn Silipigni Connaway  
Senior Research Scientist  
OCLC Research  
[lynn\\_connaway@oclc.org](mailto:lynn_connaway@oclc.org)

Suggested citation:

Connaway, Lynn Silipigni, and Marie L. Radford. 2011. *Seeking Synchronicity: Revelations and Recommendations for Virtual Reference*. Dublin, OH: OCLC Research. <http://www.oclc.org/reports/synchronicity/default.htm>.

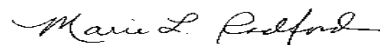
## ACKNOWLEDGMENTS

It takes intense teamwork, individual effort and a virtual community to complete multiyear, multiphased, user-centered research and this project is no exception. It also takes a considerable amount of resources and for this we thank the Institution of Museum and Library Services (IMLS), OCLC Online Computer Library Center, Inc. (OCLC), and Rutgers, The State University of New Jersey for funding this project. We also want to thank those who worked with us during the past six years to collect and analyze the data and to share the findings. Without the help of Jeremy Browning, Patrick Confer, Timothy J. Dickey and Erin Hood of OCLC Research; Andy Havens, Brad Gauder, Tom Storey and Reneé Wissel of OCLC Marketing; and Jocelyn DeAngelis, David M. Dragos, Stephanie Kipp, Victoria D. Kozo, Mary Anne Reilly, Andrea Simzak, Susanna Sabolcsi-Boros, Julie Strange and Janet Torsney of Rutgers University, successful completion of this project would not have been possible.

We hope you enjoy reading this recap of our research and that it will be useful to you for spreading the word about virtual reference services and for improving their quality, impact and importance.



Lynn Silipigni Connaway  
Senior Research Scientist  
OCLC Research



Marie L. Radford  
Associate Professor  
Rutgers, the State University of New Jersey

## TABLE OF CONTENTS

### 01 INTRODUCTION

Redefining the “R” in “VR” . . . . .	2
Synthesizing “Seeking Synchronicity” . . . . .	2
What went into the original research? . . . . .	4
What kinds of questions did we ask? . . . . .	6
What were the goals of the research? . . . . .	6
How to use this document . . . . .	7
References. . . . .	8

### 09 CHAPTER 1

#### PULL, NOT PUSH—ATTRACTING POTENTIAL USERS

Helpful clues about library service from non-users of virtual reference . . . . .	10
What’s hot and what’s not . . . . .	10
Recommendations . . . . .	12
Realizing the potential . . . . .	13
How the data stack up . . . . .	14
What research participants told us . . . . .	16
References. . . . .	17
Additional readings. . . . .	18

### 19 CHAPTER 2

#### DOUBLE VISION—HOW USERS’ AND LIBRARIANS’ VIEWS ON VIRTUAL REFERENCE DIFFER

What’s hot and what’s not: two different perspectives . . . . .	21
Recommendations . . . . .	22
How the data stack up . . . . .	23
What research participants told us . . . . .	25
References. . . . .	26
Additional readings. . . . .	26

# TABLE OF CONTENTS

## 28 CHAPTER 3

### “TALKIN’ ‘BOUT MY GENERATION:” MILLENNIAL VS. BOOMER USE OF VIRTUAL REFERENCE

Two generations: Millennials and Baby Boomers . . . . .	29
Generational differences in information-seeking behavior . . . . .	29
Positive perceptions of virtual reference . . . . .	30
Why not use VR? . . . . .	31
Interpersonal communication aspects of virtual reference . . . . .	32
Recommendations . . . . .	34
What research participants told us . . . . .	35
References. . . . .	37
Additional readings. . . . .	38

## 40 CHAPTER 4

### “WAY SWEET” OR “JUST WRONG”: CRITICAL FACTORS FOR VIRTUAL REFERENCE SUCCESS

What’s hot. . . . .	41
What’s not. . . . .	43
Recommendations . . . . .	44
What research participants told us . . . . .	45
How the data stack up . . . . .	49
References. . . . .	50
Additional readings. . . . .	50

## 52 CHAPTER 5

### QUESTIONS ABOUT QUESTIONS—THE IMPORTANCE OF QUERY CLARIFICATION

What’s hot. . . . .	53
What’s not. . . . .	54
Recommendations . . . . .	55
References. . . . .	56
Additional readings. . . . .	56

# TABLE OF CONTENTS

## 58 CHAPTER 6

### THE CONVENIENCE FACTOR—EASY IS AS EASY DOES

The studies . . . . .	59
What's hot . . . . .	60
What's not . . . . .	60
Findings . . . . .	60
Recommendations . . . . .	64
What research participants told us . . . . .	65
References. . . . .	66
Additional readings. . . . .	66

## 68 CONCLUSION

### MOVING VR FORWARD

What can your library do? . . . . .	69
What can you do? . . . . .	70
Final thoughts. . . . .	71
References. . . . .	72
Bibliography. . . . .	73

# INTRODUCTION





### REDEFINING THE “R” IN “VR”

As we become more and more comfortable mediating all kinds of situations online and through various technologies, our virtual selves increasingly overlap our “real” lives. There’s so much “virtual” in our days that it has become, for many of us, synchronous with the other, more analog aspects of our work, play and even friendships. Posting a “happy birthday!” message on Facebook is as automatic as dropping a card in the mail. E-mailing relevant links to co-workers happens as naturally as mentioning an interesting article over lunch.

Which points toward why the “R” in “Virtual Reference” needs to change if libraries are going to succeed in promoting reference through chat sessions, phone calls, e-mails, texts, mobile applications and other as-of-yet unimagined technologies.

**If we want people to accept and promote the library’s role in their online information lives, we need to make the “R” also stand for “Relationships.”**

### SYNTHESIZING “SEEKING SYNCHRONICITY”

Going back to 2005, our research of the use of virtual reference (VR) has had one primary goal: to deliver research-based recommendations that will improve the service that information professionals provide. The purpose of this publication is to distill several years’ and several hundred pages’ worth of work into a few very specific, easily digestible, actionable suggestions for how you can sustain and develop your VR services and systems (Radford and Connaway 2005–2008a).

As stated, this publication boils down many research projects done by many researchers, at OCLC, Rutgers University and elsewhere. For those of you interested in the long version, please take some time with the bibliography at the end of this work and especially check out the Seeking Synchronicity website (<http://www.oclc.org/research/activities/synchronicity/>). For those of you who want the “abridged version of the short version,” here it is—what we learned, presented so you can quickly understand and apply our research findings to immediately improve your VR experiences.

#### **It’s all about the relationships.**

Thus our emphasis on thinking about “VR” in order to draw your attention to “Virtual Relationships.” Interpersonal communication is important for both user and librarian satisfaction and success in all reference delivery modes. The best time to create a lifelong VR user is during the face-to-face interview. Library users have strong and, often, very positive relationships with their librarians. As explained in the OCLC 2008 membership report, *From Awareness to Funding: A study of library support in America*, supporters of library funding recognize the value of a “passionate librarian” as a true advocate for lifelong learning (De Rosa and Johnson 2008). If you want users to trust

and value the services you provide at a distance, start that conversation when you're up close. In fact, we found that without this kind of "warm transfer," some young people are reluctant to use VR because of concerns about online safety and privacy. Children are now taught to be wary of strangers online. Without an explicit, live introduction to VR, many users will not bring the trust and appreciation they feel for librarians into an online experience.

The other take-away we found with regard to relationship-building has to do with courtesy: don't take it for granted. Users very much appreciate the "little things" when it comes to virtual conversations. Even if a "thank you" or "please wait" message is clearly system-generated, it is meaningful. When in doubt, always use your best service excellence skills, and don't forget your sense of humor. Keeping the encounter professional, yet friendly in tone can go a long way in establishing rapport and in defusing difficult situations.

### **The death of ready reference has been exaggerated.**

While this is a valid concern, we found that, over time, live reference service and associated VR systems are alive and well. OCLC QuestionPoint chat reference usage is increasing with the introduction of the Qwidget, which makes it easy to use chat from library websites. Our analysis found that ready reference questions (questions that can be answered by factual information) could easily be answered by a Web search. As more content shifts into the online sphere, more mediation is necessary than ever before to help provide media literacy and research instruction.

### **Query clarification is key to accuracy and effectiveness.**

Because of the nature of the VR environment, online relationships lack many of the personal, social and situational cues that can be so helpful during a live reference interview. For that reason, it is absolutely vital that information professionals take the time up-front to make sure they understand their users' research goals.

### **Convenience is the hook.**

When we asked users why they appreciated VR, the most frequent answer was simple: **convenience**. It may sound overly simplistic, but it's one of the important reasons we all began to offer these services in the first place. The trick, then, is to make sure that users have every chance to find and use your VR service (VRS). Until they do so, the convenience factor can't enter into the equation.

### **Pay attention to the questions asked and your interpersonal behavior when communicating.**

In addition to improving your overall systems and services, we found that there are a few factors that tend to make any particular VR session successful. They are: accuracy, a positive attitude on the librarian's part and good communication skills. Nothing surprising there...but reinforcing these, and

a few other very specific behaviors, can go a long way toward improving your users' satisfaction with the service. Be pleasant, be upbeat, tell them what you can do rather than what you can't.

### **Generational differences do come into play.**

Not surprisingly, there are some generational differences when it comes to the use of VR. In general, we can say that for Baby Boomers, problems with VR tend to be technical. For Millennials, negative issues are more personal. They need more reassurance and want instant answers. Sometimes we have to gently let them know that some queries cannot be answered immediately. Boomers are more forgiving when more effort is needed on their part. For both, when asked about why they haven't tried our services, unfamiliarity with VR tops the list. They simply did not know it existed.

### **Marketing matters.**

If you build it...well...probably, they won't be able to find it. It's not enough to put a link on your main library page. Odds are that most users won't even know what "Ask a Librarian" means in regard to reference questions. You need to promote your VRS among users, teachers, businesspeople and leaders in the community. The best place to do this is in the library itself. Any time you engage in a live reference interaction, hand your user a business card with instructions on how to get the same information through e-mail, phone, chat or texting. Create a QR (Quick Reference) code that launches your "Ask a Librarian Service" and put it everywhere, on the business card, on posters in the library, on table cards, etc. QR codes are those square bar codes that you are beginning to see everywhere. Do the same in public library programs and in academic library use instruction sessions and orientations. Primarily younger people told us that they want to be welcomed into the service and will take their cue from trusted librarians and teachers before deciding to try it.

Each section of this publication will provide some background to these themes, along with some of our favorite quotes from librarians and users, and a bibliography for suggested further reading.

## **WHAT WENT INTO THE ORIGINAL RESEARCH**

The project "Seeking Synchronicity: Evaluating Virtual Reference Service from User, Non-User, and Librarian Perspectives" was funded by the Institute of Museum and Library Services (IMLS); Rutgers, The State University of New Jersey; and OCLC Online Computer Library Center, Inc. It consisted of four phases of data collection and analysis, lasting from October 1, 2005 to March 29, 2008 (Radford and Connaway 2005–2008a). It used a logical sequence in the process of data collection, with each phase informing the next. A range of qualitative and quantitative methods of analysis were used.

### Phase I:

We conducted a total of eight focus group interviews, two each with VRS librarians and users, and four with non-users. Three of the non-user focus group interviews were with the youngest members of the “Millennial” Generation, born between 1979 and 1994. The responses from the youngest Millennials, used here for those ages 12–18 and known as “screenagers,” (Rushkoff 1996) suggested that this group had different expectations for services and systems than the other demographic groups. The focus group sessions were transcribed, and we extracted major themes from the data. Results were used to inform construction of the online survey and telephone interview instruments. Millennials also were specifically recruited for the online surveys and telephone interviews.

### Phase II:

We gathered VRS transcripts from the 24/7 Reference Cooperative and OCLC QuestionPoint databases in two subphases. From July 2004 through June 2005, a random sample of 25 transcripts was taken each month from a database of nearly 264,000 VRS sessions. In addition to these 300 transcripts, a second random sample of approximately 50 transcripts was taken from a database of more than 250,000 VRS sessions for each month between December 2005 and November 2006, resulting in an additional 550 transcripts. The VRS transcripts contained a wealth of information, and these data were used to expand existing coding schemes and to construct new ones. The transcripts were analyzed for the following: interpersonal communication behaviors, accuracy, type of question, subject of question, length of interaction, type of library, wait time, and query clarification behaviors and techniques. As a direct result of the transcript analysis, we created and applied two new coding schemes, including the Query Clarification Coding Scheme and the Ready Reference Accuracy Coding Scheme.

### Phase III:

We developed online survey instruments from focus group interview data, and from the initial research questions. A separate online survey was developed and pretested for each of the three cohort groups—VRS librarians, users of VRS and non-users of VRS. Participants completed a total of 496 online surveys. The respondents in each demographic category provided answers for questions that resulted in both quantitative and qualitative data.

### Phase IV:

Telephone interview questions for all three groups were developed from participant responses in the focus group interviews and to the online surveys, as well as from the initial research questions. We then developed a separate set of interview questions and pretested for each of the three study groups. A total of 283 telephone interviews were completed.

## **WHAT KINDS OF QUESTIONS DID WE ASK?**

The questions we asked librarians and end users fell into the following categories:

1. What are the critical factors that influence users' decisions to select and use VRS?  
Why do non-users opt to use other means?
2. What are the critical factors that determine users' perceptions of success and satisfaction in VRS?
3. How do users and librarians differ in their perception of factors critical to their perceptions of success and satisfaction?
4. What is the relationship between information delivered/received (task/content) and interpersonal (relational) dimensions of VRS in determining perceptions of satisfaction/success?
5. What is the impact of the use of prepared scripted messages on satisfaction/success (e.g., "Welcome to our service, a librarian will be with you in a few minutes.")?  
Do impersonal scripted messages impact user behavior (e.g., promote rude behavior)?
6. How does users' satisfaction with face-to-face (FtF) reference encounters compare to satisfaction with reference encounters in virtual environments (including chat and e-mail)?
7. How do users express satisfaction?  
Do overt "thank you" messages equal satisfaction/success?

## **WHAT WERE THE GOALS OF THE RESEARCH?**

While the overall goal was to provide research that can help you improve your VRS, it might be helpful for you to know the more specific goals of our research as well:

1. To identify research-based practices for attracting additional users to VRS.
2. To understand what users want from VRS in order to develop more effective services that meet the users' information needs and ensure their satisfaction.
3. To collect information from individuals from diverse cohort groups who are infrequently sampled in LIS research (including non-users, international users, etc.).
4. To provide research-based guidelines to inform VRS practice and policy.

5. To refine Radford's (Radford and Connaway 2005–2008c) recommendations for improving interpersonal communication in VRS for both librarians and users.
6. To identify factors critical to successful VRS interactions and to develop guidelines and recommendations for evaluation of VRS.
7. To provide a snapshot of VRS and users in a time of rapid change and ongoing development.
8. To inform software development and interface design.
9. To develop a research agenda and to serve as a foundation for future research projects in user-centered VRS.
10. To develop a theoretical model for VRS that incorporates interpersonal (relational) aspects as well as information (content) aspects (Radford and Connaway 2005–2008b).

## HOW TO USE THIS DOCUMENT

We have deliberately tried to make this publication as friendly (and brief) as possible. The primary intended audience is library reference staff—those who deliver the services discussed. Secondly, we believe our research should be of interest to library directors and administrators who manage reference services.

The six chapters are separated into two major themes. The first concentrates on issues related to the audience and environment for VR. It provides background information that's important to know when reviewing and retooling your services—the “who” and “why” of our data. The second section features research about the activities and options associated with VRS—the “what” and “how.”

We suggest that you take a look at all six of the main chapters to get an overview of our findings, and then spend some time with the summary, in which we present some specific ways in which you can plan for future VRS success. Our recommendations will make more sense to you in light of the research details themselves.

Finally, we recommend that you ask yourself this question: how can I transform VRS into relationship builders? In the end, your users aren't just looking for answers to specific questions—they are also seeking partners and guides in an information-seeking journey, a journey of a lifetime. VRS provide a unique and powerful way to leverage the positive feelings people have for libraries in an online space that is crowded with options. It helps to remember that while Google may be much bigger and more pervasive than your library, it doesn't have your voice, your experience or your insight into your community's unique needs.

Build positive relationships, one virtual encounter at a time. The rest will follow.

## REFERENCES

De Rosa, Cathy, and Jenny Johnson. 2008. *From Awareness to Funding: A study of library support in America: A report to the OCLC Membership*. Dublin, OH: OCLC Online Computer Library Center, Inc.

Radford, Marie L., and Lynn Silipigni Connaway. 2005–2008a. *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives*. Funded by the Institute of Museum and Library Services (IMLS). <http://www.oclc.org/research/activities/synchronicity/>.

———. 2005–2008b. Appendix O to *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives*. Funded by the Institute of Museum and Library Services (IMLS). <http://www.oclc.org/research/activities/synchronicity/reports/20080626-final-appendices.pdf>.

———. 2005–2008c. Appendix R to *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives*. Funded by the Institute of Museum and Library Services (IMLS). <http://www.oclc.org/research/activities/synchronicity/reports/20080626-final-appendices.pdf>.

Rushkoff, Douglas. 1996. *Playing the future: How kids' culture can teach us to thrive in an age of chaos*. New York: HarperCollins.



**PULL, NOT PUSH—ATTRACTING  
POTENTIAL USERS**





## HELPFUL CLUES ABOUT LIBRARY SERVICE FROM NON-USERS OF VIRTUAL REFERENCE



*I liked the one-on-one interaction, which enabled me to have my specific questions answered on the spot. The librarian was able to address my specific needs with practical, useful information. She was friendly and appeared genuinely glad to be helping me. I think the face-to-face format did help, since it was a relaxed meeting. I was comfortable with the librarian, so I was comfortable asking questions. The in-person meeting was necessary to help me learn how to locate articles on microfiche and how to use the equipment.” –Millennial*

*“I’ve never used this type of service and never knew it was available—that’s probably why I never tried it.” –Millennial*

*“I stay away from the unknown, I guess.” –Millennial*

More and more people are doing research on the Web, gaining comfort in their abilities to find information and resources from their home or office. If that’s the case, then why don’t more people use virtual reference (VR)? It would seem an ideal blend of convenience and service—access to a live, focused information professional, ready to help provide direction and assistance, all without the hassle of driving or walking to a physical library. And yet, even after more than 10 years of availability, use of live chat services is still relatively low when compared to use statistics for Web search engines, such as Google or Ask.com.

In order to better understand why someone might choose not to use virtual reference services (VRS), we researched the habits and attitudes of non-users of VR, all of whom were users of traditional face-to-face (FtF) reference. This research also revealed generational differences that influence the choice not to use VR and captured non-users’ attitudes about preferred information-seeking modes and behaviors. These data about non-users provide insight into how we might better position and provide VR. If we want to increase usage and appreciation of these services, it is important to understand why some choose not to take advantage of them.

## WHAT’S HOT AND WHAT’S NOT

While the people we interviewed and surveyed for our studies reported many reasons for not using VR, several stand out as worthy of focus if we are to try to encourage more use of these services:

- **Preference for FtF Service.** Many users have great relationships with reference librarians that have developed in traditional settings. This makes the value proposition of VR one that

can sometimes compete with, rather than augment, FtF reference.

- **They don't know it exists.** Many users are simply unfamiliar with available VRS and the technology and information available through these services.
- **VR is an unknown or unfamiliar format.** Users may lack comfort with the chat format, which may be attributed to demographic factors, such as age and socio-economic and educational levels, and experience with technology and chat services.

Other notable reasons:

- Equating chat reference with a generic online chat room in which they might encounter unknown strangers.
- Being negatively evaluated by a librarian; possible embarrassment.
- Having reference transcripts revealed (e.g., to professors).

### What's hot:

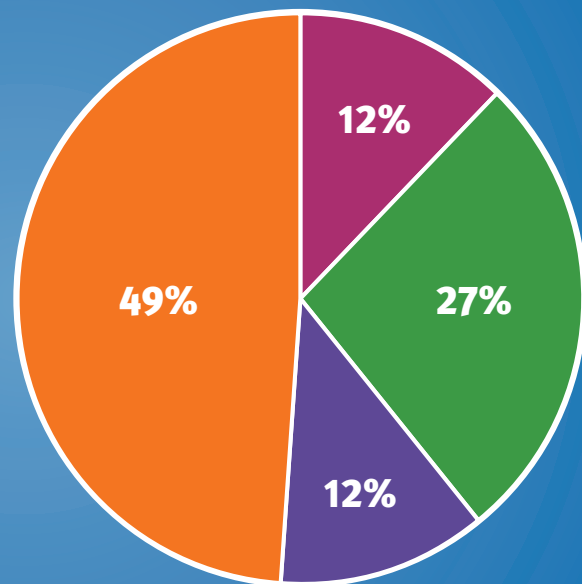
Our research found that many VRS non-users had a great, personal relationship with one or more librarians. Those positive experiences provide an important basis for users' satisfaction with the library. On the other hand, having a wonderful live reference experience may create an expectation for users that this type of interaction is the only—or, perhaps, always the best—method for working with a librarian on research topics.

#### CHART 1.1

FtF Preferred by Millennial Non-users Online Survey: "I most enjoy using"

122 MILLENNIAL NON-USERS

- FtF 60 = 49%
- Texting 15 = 12%
- E-mail 33 = 27%
- Phone 14 = 12%



### What's not:

Among the VRS non-users, many were regular users of the library who simply reported that they weren't aware of the available VRS. Unlike studies that report on the general lack of familiarity with online library resources, our research focused on those who do use the library. Yet within this group of library users, 28% had used the phone for library reference questions, and 19% had asked a question through e-mail.<sup>1</sup> Only 2%, though, had ever used chat or Instant Messaging (IM) reference. This figure is low because we specifically recruited non-users of VRS (see Chart 1.3)

This lack of familiarity indicates a lack of promotion on the library's part and/or a basic misunderstanding of what VR is on the users' part.



*"I'm not going to go get tutored on the Internet by somebody who I personally don't know who might be some psycho serial killer out there when I could get personal help from my home and people in my community." –Stated by a female Millennial student in her first year of high school in a rural area*

Maybe we shouldn't be surprised by this comment—for years we've educated the public, and children in particular, to be wary of anonymous, faceless Web contacts. From the point of view of librarians, though, the idea that this concern is relevant to VR may seem almost ludicrous. How could someone be concerned, let alone afraid, of contact with a reference librarian through a chat interface? No matter how counterintuitive these concerns may seem to us in the library profession, they are real to many users.

These types of comments, centering on trust and privacy issues, were actually more prevalent among the younger members of our study population (Millennials, the youngest of whom have been referred to as "screenagers" by Rushkoff 1996). In the words of one urban screenager: "I don't usually like to talk to like people I don't know on the internet." These differentiations not only include age distinctions, but also differences in technological preferences and experiences). Older adults, on the other hand, were more likely (53% vs. 35% for Millennials) to believe that the service might be "too complicated," or be concerned (35% vs. 16% for Millennials) that their typing skills were too poor (see Chart 1.4).

## RECOMMENDATIONS

In providing VRS, libraries are clearly attempting to offer an easy, convenient, Web-based alternative service to live reference. When asked in telephone interviews what might convince them to try VR, 61% of our participants listed some factor related to convenience. Being unaware of VRS is the biggest factor for not using it. The factors listed above clearly outweigh the convenience factor of chat reference and limit the widespread use of VRS.

1. Unless otherwise noted, the data quoted are from Radford, Marie L., and Lynn Silipigni Connaway. 2005–2008. *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives*. Funded by the Institute of Museum and Library Services (IMLS). <http://www.oclc.org/research/activities/synchronicity/>.

Our strongest recommendation to boost use of VRS is to introduce and demonstrate online alternatives during **in-person reference sessions, library use instruction classes and library programs**. Taking the initiative to educate users in the physical library about VR options addresses all three of the main issues we identified:

- First, by acknowledging and leveraging the positive relationship that users have with librarians FtF, the promotion of VRS can become an extension of that bond, rather than competing with it. The trust that users place in live librarians—and that we hope would be validated in every reference session, either in person or virtually—can then help users overcome their initial reluctance.
- Since most users were not even aware of VRS, there is probably no better moment to promote them than in the live, library environment. In the live environment, a current, active library user makes a much more impressionable and persuadable user. Any marketing done, even reasonably priced marketing, such as “viral marketing” (referrals), can help promote VRS. Not knowing about the service makes it impossible to use!
- Introduction of the service by a trusted librarian may go a long way toward allaying the fears of users, especially younger ones. If librarians acknowledge the validity of these concerns, they can place the use of VR within a broader context, initiating a discussion about media literacy in general.

In addition, live librarians are able to walk users through the use of the service, answering questions about the software and addressing privacy concerns. When asked what would get them to try VRS, older adults wanted some hand holding as these comments indicate:



*“I would need much guidance.” –Older Adult*

*“Someone walking me through it.” –Older Adult*

*“Perhaps someone could teach me on a face-to-face basis.” –Older Adult*

## REALIZING THE POTENTIAL

The mode of reference service is dependent upon what is convenient for the user. This means that libraries need to offer a suite of reference services that utilize a variety of different modes. This enables users to select the mode that best fits their situation. Again, offering and promoting VRS:

- Positions your library as tech-savvy and responsive. Even if the user never tries your VRS, the fact of its existence may contribute to the feeling that “my library is really on top of new technology.” It is, in short, an excellent branding moment.

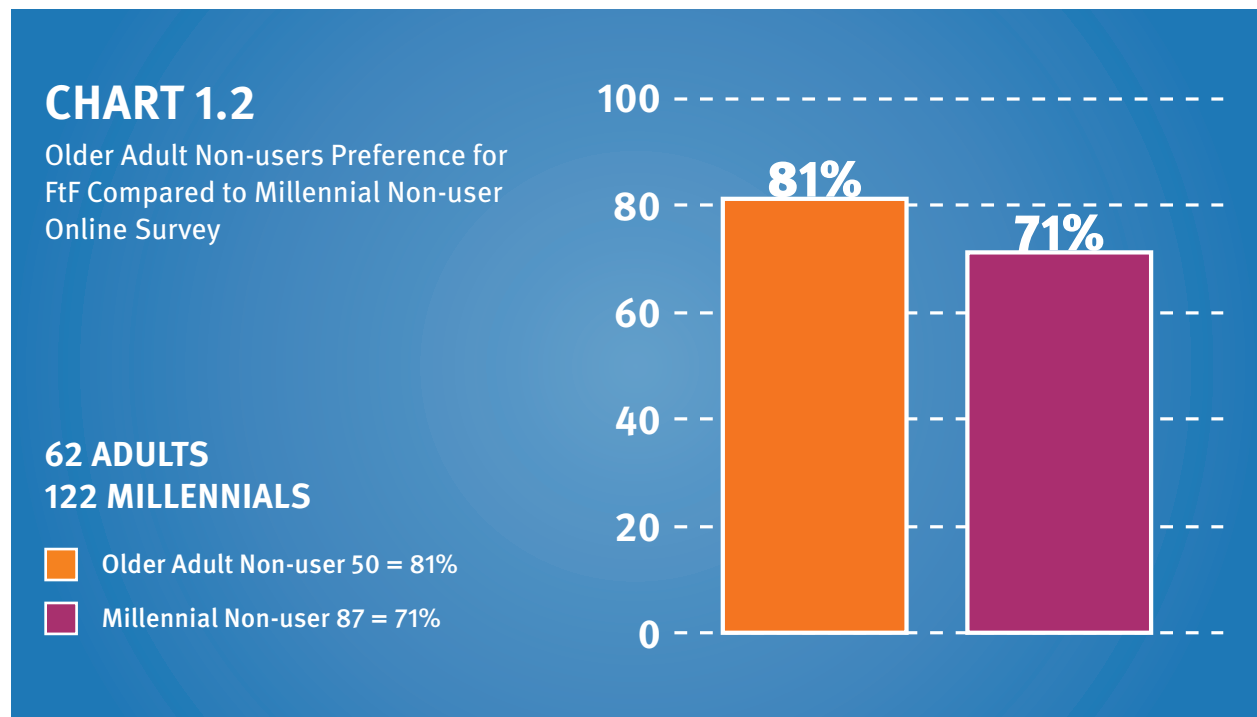
## SEEKING SYNCHRONICITY: REVELATIONS AND RECOMMENDATIONS FOR VIRTUAL REFERENCE

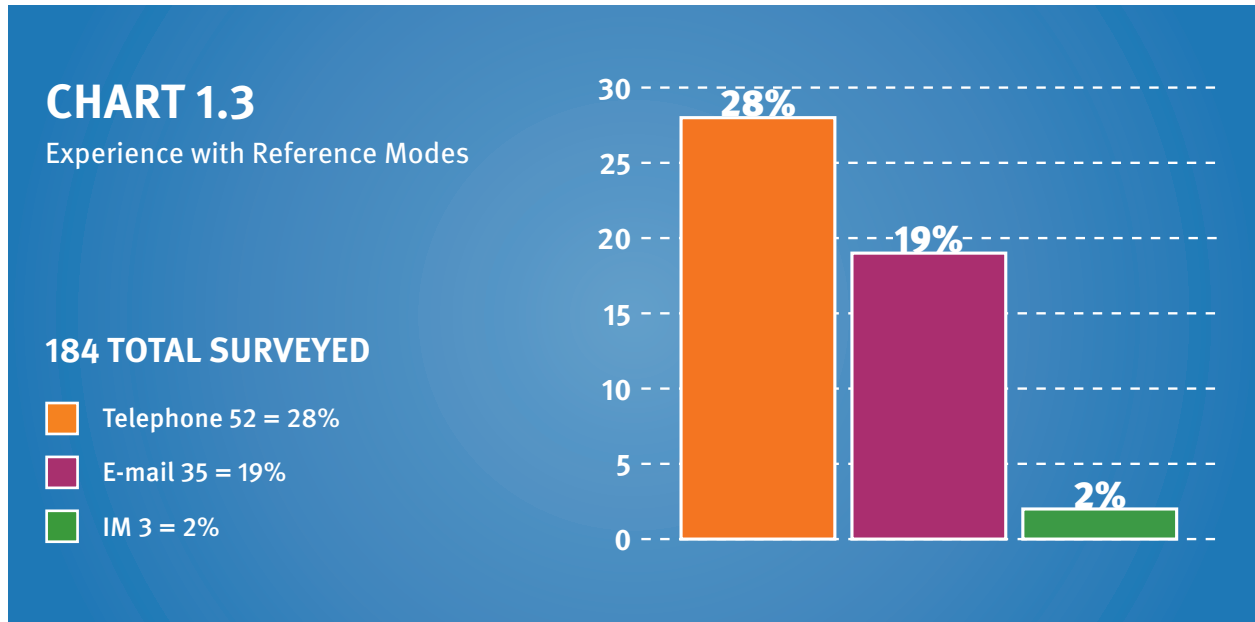
- Can be much more “viral” than live services. That is, if your users get used to the service, they can more easily pass along a link to your VR chat page than they can drive a friend to the library. Recommendations from friends and family go a long way toward increasing trust and usage of online services, too.

Even though people like FtF reference services, more and more of our “information lives” is happening online and our research found that the virtual environment, especially chat, is less intimidating than FtF or phone reference. Taking the opportunity to spread the important, personal credibility you exercise in your library into virtual space can pay long-term dividends. Your users will think of your library not just as “a place for answers,” but somewhere that provides “answers from anywhere.” If we market the convenience of VRS, we may even get more challenging questions!

### HOW THE DATA STACK UP

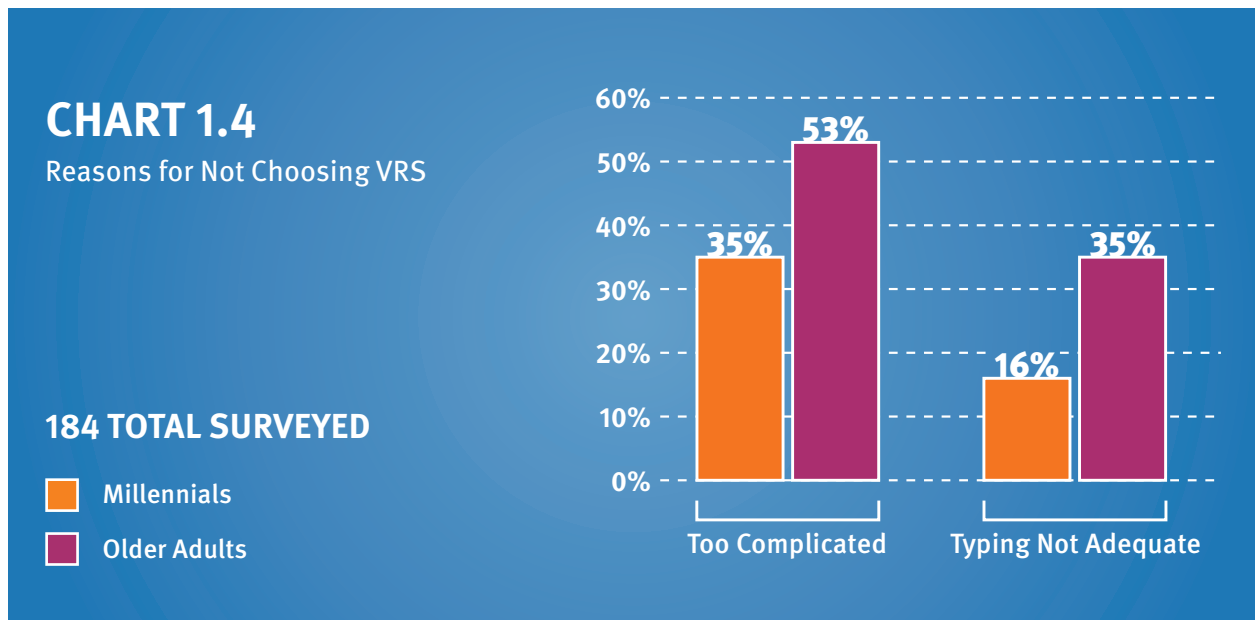
Although both older adult and Millennial non-users like FtF, users believe the VR environment is less intimidating than FtF and phone. Once users get acquainted with chat reference, we found that they prefer it over e-mail.





Reflecting the Millennials’ high level of comfort in the IM environment, 35% (N=43) of 122 Millennials and 53% (N=33) of 62 older adults agreed with the statement, “Chat reference might be too complicated.”

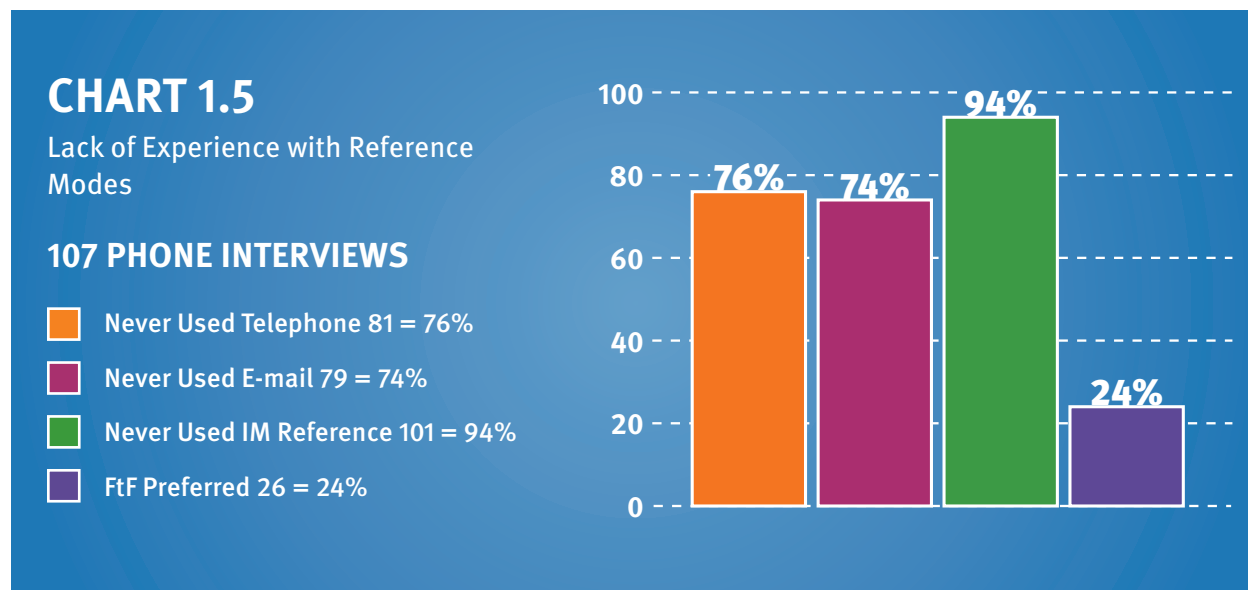
More older adults (35%, 22) were concerned that their typing was not adequate for VR compared to 16% (19) of Millennials.



Of 184 online survey respondents, 66% (122) were Millennials and 34% (62) were older adults. All reported that they had experience with FtF reference.

In addition to FtF interaction, participants reported use of other modes with 28% (52) having used

the telephone, 19% (35) e-mail and 2% (3) IM reference.



Surprisingly the telephone had never been used for reference by 76% (81) of telephone interview participants, 74% (79) had not used e-mail and 94% (101) had not used IM reference.

Twenty-four percent (26) preferred FtF reference and complimented librarians.

## WHAT RESEARCH PARTICIPANTS TOLD US

### Quotes from Older Adult and Millennial Non-users of VRS



*Most recently I wanted to read about an actor that I really enjoy. I got into a conversation with the librarian about him and she was able to locate a number of books on him, including his memoirs. At the same time she suggested that I check with videos to see what might be available and again she assisted in finding at least half dozen that I was able to borrow. I have to say that this experience gave me a great weekend in addition to some very enjoyable reading material....It was a very pleasant and enjoyable experience....In this particular circumstance having a FTF enabled us to share a more personable and friendly exchange of information.” –Older Adult*

*“I used face to face format because I think it is more direct and you are more likely to get an answer quicker, plus you are right there so you can learn things like about different reference websites. It did help by experience to be successful I feel that if you talk to someone face to face it is more personal and more helpful.” –Older Adult*

*“I have nothing truly against chat reference services, so I may use it in the future, but I will probably always rely on the face-to-face services as my main form of information seeking.” –Millennial*

## Critical Considerations for How People Find Information

When asked to think about a time when the interviewee needed to know something, a Millennial said,



*[Google]: “If I needed to find out anything I would usually go first online. That’s really my main source of information, because it’s really convenient....The fact that it is really convenient: I don’t have to go out of my room to find the source, just go online and try and can just hit enter, and it’s really convenient.” –Millennial*

### Interpersonal Communication is Valued



*I never want a computer interface to replace face to face contact with a person. In this day in age, it might be more convenient to jump on the web to get the information you need, but I think you potentially [sic] missing connections a library creates. In my business experience, email can only take you so far. Conference calls and face to face meeting provide the connections that emails can often destroy. Service should never be an either/or situation. Personal contact and computer interface connections should exist together.” –Older Adult*

*“I think by using different formats to ask the reference librarian a question is a good thing. Because we’re not always at the library and by using electronic methods to communicate with our librarian can save our time as well as their time so both ends can achieve success. The main goal is to get clear responses from the librarian in any method so I know which specific librarian to ask for next time I have a question.” –Millennial*

## REFERENCES

Radford, Marie L., and Lynn Silipigni Connaway. 2005–2008. *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives*. Funded by the Institute of Museum and Library Services (IMLS). <http://www.oclc.org/research/activities/synchronicity/>.

Rushkoff, Douglas. 1996. *Playing the future: How kids’ culture can teach us to thrive in an age of chaos*. New York: HarperCollins.



## ADDITIONAL READINGS

Connaway, Lynn Silipigni. “‘The Library is a good source if you have several months.’ Making the Library More Accessible.” Presented at the Oklahoma Chapter, Association of College and Research Libraries (ACRL), Tulsa, Oklahoma, November 5, 2007. <http://www.oclc.org/research/projects/synchronicity/ppt/acrllokchapter2007-11-05.ppt>.

———. “Mountains, Valleys, and Pathways: Serials Users’ Needs and Steps to Meet Them. Part I: Preliminary Analysis of Focus Group and Semi-Structured Interviews at Colleges and Universities.” *Serials Librarian* 52, no. 1–2 (2007): 223–36. <http://www.oclc.org/research/publications/archive/2007/connaway-serialslibrarian.pdf>.

Connaway, Lynn Silipigni, and Marie L. Radford. “Convenience, Connections, Correctness, and Choice: Critical Components of Virtual Reference Service Quality.” Paper presented at the *i3 information: interactions and impact Conference*, Aberdeen, Scotland, June 22–25, 2009. <http://www.oclc.org/research/projects/synchronicity/ppt/20090624-i3.ppt>.

———. “Service Sea Change: Clicking with Screenagers Through Virtual Reference.” In *Sailing Into the Future: Charting Our Destiny: Proceedings of the Thirteenth National Conference of the Association of College and Research Libraries, March 29–April 1, 2007, Baltimore, Maryland*, edited by Hugh A. Thompson. Chicago: Association of College and Research Libraries, 2007. <http://www.oclc.org/research/publications/archive/2007/connaway-acrl.pdf>.

Connaway, Lynn Silipigni, Marie L. Radford, and Timothy J. Dickey. “On the Trail of the Elusive Non-User: What Research in Virtual Reference Environments Reveals.” *ASIS&T Bulletin* 34, no. 2 (2008): 25–28. <http://www.asis.org/Bulletin/Dec-07/>.

Radford, Marie L. “Encountering Virtual Users: A Qualitative Investigation of Interpersonal Communication in Chat Reference.” *Journal of the American Society for Information Science and Technology* 57, no. 8 (2005): 1046–59.

Radford, Marie L., and Lynn Silipigni Connaway. “Getting Better All the Time: Improving Communication and Accuracy in Virtual Reference.” In *Reference Renaissance: Current & Future Trends*, edited by Marie L. Radford and R. David Lankes, 39–54. New York: Neal-Schuman, 2010.

———. “‘Screenagers’ and Live Chat Reference: Living Up to the Promise.” *Scan* 26, no. 1 (2007): 31–39. <http://www.oclc.org/research/publications/archive/2007/connaway-scan.pdf>.

# 2

**DOUBLE VISION—HOW USERS’  
AND LIBRARIANS’ VIEWS ON  
VIRTUAL REFERENCE DIFFER**





*I would sort of appreciate a little more understanding” –User*

*“I think that our users come from all over and they want to get help in different ways at different times, so having this whole suite of services gives them the ability to connect with us on their own terms.” –Librarian*

It may be obvious that librarians and users will approach reference challenges, and virtual reference (VR) issues, very differently. After all, users are the “customers” of these services, and librarians are the “providers.” That being said, though, it is clear that a gap often exists between what users and librarians value about these services and the relationships behind them.

Harvard Business School professor Dr. Theodore Levitt famously quipped that, “People don’t want to buy a quarter-inch drill. They want a quarter-inch hole.” When it comes to providing virtual reference services (VRS), librarians can sometimes be more interested in the features of the drill and how to drill down into the layers of information systems and databases (i.e., providing information literacy instruction whenever possible), whereas users are simply looking for the right-sized hole (i.e., specific information and full-text articles).

In addition, users bring a set of expectations to the reference experience that reflect their experiences in a consumer-focused, retail economy, especially in the fast-food “McDonald’s-ized” emphasis on quick service. Business professionals have long understood the value of user satisfaction and have been improving the customer experience for decades in order to cement brand loyalty and encourage repeat business. Users do not leave this sense of entitlement at the library door simply because they are shopping for information and ideas rather than shoes, groceries or a new e-book reader. Libraries are just becoming aware of the importance of the user experience, beginning to take cues from Unix (a computer operating system) advocates in software design.

Librarians will be more successful at reaching VR goals when measures are taken to help foster a different approach to service excellence—one that is more prominent in listening to users and implementing features that they demand. This is not to say that libraries should become retailers or abandon those practices that create educational and intellectual value for their communities. But librarians should look for ways to create a reference experience that encourages “repeat business” as well as positive and viral “buzz.” More than a change in core services or materials, this requires changes in attitude and behavior.

## **WHAT'S HOT AND WHAT'S NOT: TWO DIFFERENT PERSPECTIVES**

For the VR users interviewed for our studies, a few major factors stood out as most important to them when it came to their successful VR experience:

- Convenience
- Comfort with the service
- Accuracy.

From the librarians' perspective the positive factors that stand out are:

- The librarian's ability to leverage complex and specialized knowledge
- Users' positive attitudes, responses and feedback
- VR tools and hybrid modes of communication.

On the negative end of the spectrum, users are turned off by:

- Abrupt, dismissive answers
- Grumpy, ill-informed or uninterested librarians
- A poor wrap-up experience.

Librarians, not surprisingly, are more critical of users and express frustration with:

- Convoluted and confusing questions
- Rude, impatient and/or disappearing users
- Unrealistic expectations.

It may be a truism that people on opposite sides of any service experience will be exasperated by perceived bad behavior on the other's part; nobody likes dealing with cranky people. It is interesting to note, though, that librarians put so much emphasis on users' positive attitudes and behaviors as success factors, along with the technology and quality of their materials and training. Users, on the other hand, emphasize a need for comfort, ease of use, accuracy and speed.

While this dichotomy isn't surprising, it is important to recognize these differences so that service behaviors do not turn off inadvertently and turn away users. In any customer-supplier relationship, hoping that the customer will change his/her attitudes is a losing proposition. If improvements are to be made, they must be undertaken by the provider.

## RECOMMENDATIONS

The number-one reason why people choose VRS is convenience. The paradox of getting non-users to try VR, though, is that you cannot demonstrate convenience until you convince people to take the initial plunge. The major barrier to accomplishing that has little to do with the service itself, and more to do with relationships, yes, even those created and developed in cyberspace.

When rating why they don't always choose VR, the number-one reason given by users was "unhelpful answers."<sup>1</sup> This suggests that the problem of adoption is less one of communications technology and more one of communication clarity and quality along with delivery of the specific information sought.

These points are demonstrated in our data. Overall, the features of VR are rated as less important to users than is the opportunity to make personal connections with librarians. Forty-nine percent, 67, of VRS users who completed the online survey (N=137) rate the features as "of little importance" or "unimportant," while 47%, 64 (N=137) rate a "sense of greater connection to the librarian" as "of little importance" or "unimportant," and 36%, 50 (N=137), rate the "opportunity for dialogue" with a librarian as "of little importance" or "unimportant."

To mitigate any initial (or potential) negative experiences related to the service, we recommend:

**Establishing, when possible, a link between existing relationships** with librarians at physical reference desks and VRS. That is, have librarians recommend and explain VR to users in a face-to-face (FtF) setting. This in-person introduction provides the opportunity to transfer positive associations from the real world to the virtual. It also allows the librarian to explain the convenience factors of the services, which often will be why users return to the service after adoption.

The FtF reference experience was widely preferred to chat when the VRS users were asked in the online survey which mode was preferable for developing the best relationship with a librarian. FtF was preferred by 70%, 96 (N=137) of the respondents compared to 22%, 30 (N=137) who preferred chat. (See Chart 2.1.) When librarians were asked in what reference format (FtF, Phone, Chat, E-mail, IM, Text Messaging) they were able to develop the most positive relationship with users, they, too, preferred FtF (86%, 151) to chat (7%, 12). (See Chart 2.1.) If you want to get people to use VRS, promote the development of virtual communication and relationships among librarians, VRS users and potential users.

Sixty-six percent (115) of the librarian online survey respondents reported that chat reference provides them with "excellent," "very good" or "good" opportunities to make personal connections with users. (See Chart 2.2.) However, when users were asked in the online survey the importance of using chat to make personal connections with librarians, 74% (101) responded that this was "moderately important," "of little importance" or "unimportant." Twenty-one percent (29) of the

1. Unless otherwise noted, the data quoted are from Radford, Marie L., and Lynn Silipigni Connaway. 2005–2008. *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives*. Funded by the Institute of Museum and Library Services (IMLS). <http://www.oclc.org/research/activities/synchronicity/>.

users reported that this was “very important” or “important,” indicating that although librarians believe chat provides them with a very good opportunity to connect with users, users do not rate this opportunity as the most important for using the service. (See Chart 2.3.)

**Make sure that text chat is available** as a VR option. More than half of respondents consistently rated themselves either “excellent” or “very good” at using the service. That level of user comfort will help overcome one of the largest problems that librarians have with VR; 72%, 126 (N=175) of VRS librarians who responded to the online survey reported that difficulties caused by users’ computer literacy negatively impacted the librarians’ perception of the service. Chat was ranked a relatively close second in most other categories by the 137 VRS users who responded to the online survey, including overall effectiveness (48%, 66, for FtF and 41%, 56, for chat), communication ease (45%, 61, for FtF and 39%, 54, for chat), accuracy (44%, 60, for FtF and 33%, 45, for chat), and reliability (50%, 68, for FtF and 29%, 40, for chat). The takeaway being, once you get past the relationship curve, you can utilize chat as effectively as FtF reference.

**Patience, patience, patience.** Seventy-three percent, 128 (N=175) of VR librarians cite “user impatience” with software as a negative issue when evaluating their VR experiences. Especially during a first use of the service, remember that users are probably evaluating the relationship aspects of the encounter at least as much as the technical or informational details. If the user seems to be impatient, this may be a sign that the user is unfamiliar or uncomfortable with the live chat environment and may need reassurance. If you want repeat VR business, it’s our job to transform their impatience into something more productive. Sometimes humor helps to engage them. The service excellence skills we use in FtF encounters, are equally effective in chat. Remember that, over time, the convenience aspects of the services will win them over...but only if your relationship with them is perceived as positive. Establishing a positive relationship from a pleasant greeting to a warm closing will be effective in curtailing unpleasant encounters and encouraging positive ones with users of all ages, but especially with users who are in their teens and twenties.

## HOW THE DATA STACK UP

If you’ve spent any time, as a librarian, using your VR tools, you will be an expert in them from a technical standpoint—both in terms of what you can do with them and what frustrations still exist. Remember that your users don’t want to become VR experts; they want a quick, convenient answer to a question. If you establish high service excellence standards in your FtF services as well as in online chat reference, you have a great chance to convert someone into a lifelong user (and recommender!) of VR. Ultimately this goal is accomplished by one librarian with one user at a time.

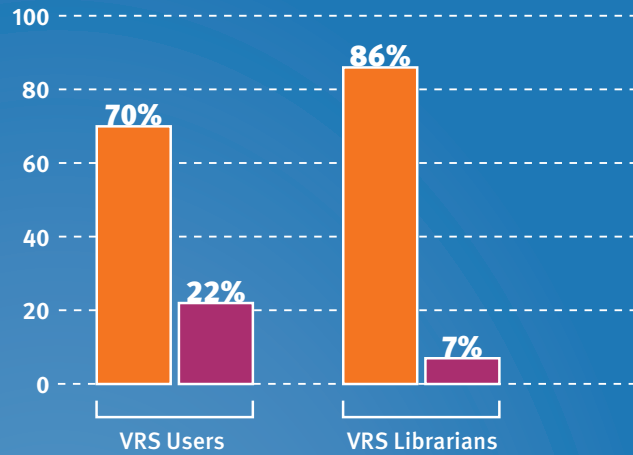
### CHART 2.1

“I Can Develop the Best Relationship with a Librarian/User In”  
Online Survey

137 VRS USERS

175 VRS LIBRARIANS

- FtF
- Chat

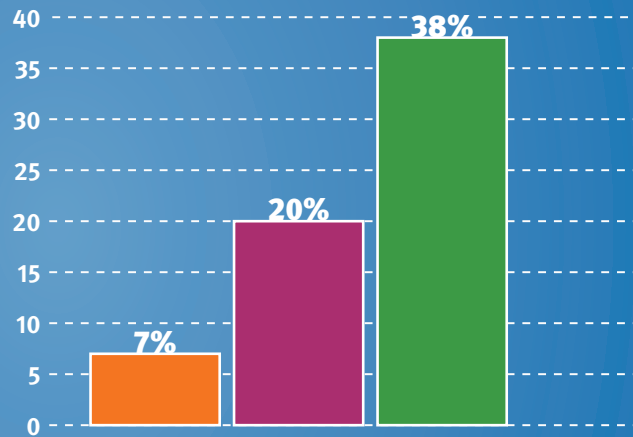


### CHART 2.2

Opportunity to Make Personal Connections with Users in Live Chat  
Online Survey

175 VRS LIBRARIANS

- Excellent 13 = 7%
- Very Good 35 = 20%
- Good 67 = 38%

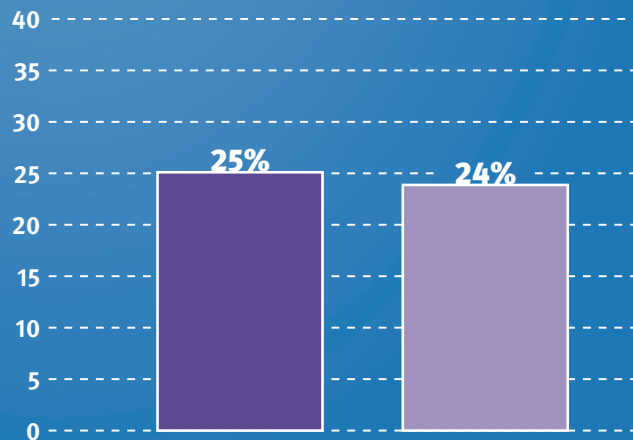


### CHART 2.3

Opportunity to Make Personal Connections with Librarians in Live Chat  
Online Survey

137 VRS USERS

- Of Little Importance 34 = 25%
- Unimportant 33 = 24%



## WHAT RESEARCH PARTICIPANTS TOLD US



*[Market] it more. Because I didn't hear about it until I started working at this job a few months ago.” –User*

*“[VRS] gives you goose bumps. It does. But in social aspects it's one of the most thrilling things I've run across.” –Librarian*

*“I don't think [I would use VRS] because I like going to people I know. I would probably try it as a last desperate resort...I'd feel a little creeped out talking to some random person about it but okay, I'd give it a shot.” –User*

*“I think that our users come from all over and they want to get help in different ways at different times, so having this whole suite of services gives them the ability to connect with us on their own terms.” –Librarian*

*“I could easily have found the information she found for me, but the fact that I could just ask her question and have them look up the reference and read through articles instead of me having to look through like a million Googled articles...it was definitely a nice convenience and would definitely make it more likely for me to go to them and actually ask a librarian a question or figure it out on my own.” –User*

*“We have to be able to accompany a broader array of browsers and operating systems and things like that.” –Librarian*

*“I was on the site at 2 or 3 in the morning and it felt personalized. I don't know, I felt like I was the only person the other person had to talk to and they took the time out.” –User*

*“We've been able to reach people we know we'd never reach otherwise, they'd never come in the building, wouldn't pick up the phone; we've actually had people tell us that, they say reference librarians are scary.” –Librarian*



## REFERENCES

Radford, Marie L., and Lynn Silipigni Connaway. 2005–2008. *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives*. Funded by the Institute of Museum and Library Services (IMLS). <http://www.oclc.org/research/activities/synchronicity/>.

## ADDITIONAL READINGS

Connaway, Lynn Silipigni, and Marie L. Radford. “The Thrill of the Chase in Cyberspace: A Report of Focus Groups with Live Chat Librarians.” *Informed Librarian Online* (2007). <http://www.informedlibrarian.com/guestForum.cfm?FILE=gf0701.html>.

———. “Virtual Reference Service Quality: Critical Components for Adults and the Net-Generation.” *Libri* 60, no. 2 (June 2010): 165–80.

Connaway, Lynn Silipigni, Marie L. Radford, and Timothy J. Dickey. “On the Trail of the Elusive Non-User: What Research in Virtual Reference Environments Reveals.” *ASIS&T Bulletin* 34, no. 2 (2008): 25–28. [http://www.asis.org/Bulletin/Dec-07/DecJan08\\_Connaway\\_etc.pdf](http://www.asis.org/Bulletin/Dec-07/DecJan08_Connaway_etc.pdf).

Connaway, Lynn Silipigni, Marie L. Radford, Timothy J. Dickey, Jocelyn DeAngelis Williams, and Patrick Confer. “Sense-Making and Synchronicity: Information-Seeking Behaviors of Millennials and Baby Boomers.” *Libri* 58, no. 2 (2008): 123–35. <http://www.oclc.org/research/publications/archive/2008/connaway-libri.pdf>.

Connaway, Lynn Silipigni, Marie L. Radford, and Jocelyn DeAngelis Williams. “Engaging Net Gen Students in Virtual Reference: Reinventing Services to Meet Their Information Behaviors and Communication Preferences.” In *Pushing the Edge: Explore, Extend, Engage: Proceedings of the Fourteenth National Conference of the Association of College and Research Libraries*, March 12–15, 2009, Seattle, Washington, edited by Dawn M. Mueller, 10–27. Chicago: Association of College and Research Libraries, 2009. <http://www.oclc.org/research/publications/archive/2009/connaway-acrl-2009.pdf>.

Radford, Marie L. “Encountering Virtual Users: A Qualitative Investigation of Interpersonal Communication in Chat Reference.” *Journal of the American Society for Information Science and Technology* 57, no. 8 (2006): 1046–59.

———. “Interpersonal Communication in Chat Reference: Encounters with Rude and Impatient Users.” In *The Virtual Reference Desk: Creating a Reference Future*, edited by R. David Lankes, Eileen Abels, Marilyn White, and Saira N. Haque, 41–73. New York: Neal-Schuman Publishers, 2006.

Radford, Marie L., and Lynn Silipigni Connaway. "Getting Better All the Time: Improving Communication and Accuracy in Virtual Reference." In *Reference Renaissance: Current & Future Trends*, edited by Marie L. Radford and R. David Lankes, 39–54. New York: Neal-Schuman, 2010.

Ross, Catherine Sheldrick, Kirsti Nilsen, and Marie L. Radford. *Conducting the Reference Interview*. 2nd ed. New York: Neal-Schuman, 2009.

# 3

**“TALKIN’ ‘BOUT MY GENERATION:”  
MILLENNIAL VS BOOMER USE OF  
VIRTUAL REFERENCE**



Virtual reference services (VRS) offer the potential to serve the information needs of library users and other information seekers of a wide age span. From high schoolers writing their first term papers to college faculty pursuing publishing venues for their research, to seniors looking for timely medical information, virtual reference (VR) can help them obtain quality information. But does the information seekers' generational group affect their expectations for VR and the likelihood that they'll use it?

Our research during the past five years indicates that while age may impact what individuals think about VR, the main barrier to use is the same for all age groups—people simply don't know that these reference venues exist.

## TWO GENERATIONS: MILLENNIAL AND BABY BOOMERS

We studied the information behaviors of two generational groups, popularly known as “Millennials” and “Baby Boomers.”

The Millennial participants are those born from 1979 to 1994. In our research, the younger half of this generation also are sometimes referred to as “screenagers” due to the amount of time much of this group spends in front of a screen...a television...a computer...a mobile phone...a hand-held game (Rushkoff 1996).

Millennial study participants range from middle school children to graduate students, young parents, or those relatively new to the work force—a group with widely varying information interests. Technology dominates their socialization, and most of them began using computers by the time they were eight years old. Many are considered “Digital Residents” who take for granted and live a “percentage of their life online” (White 2008).

Baby Boomers—those born from 1946 to 1964—are known for their self-absorption and a desire to stay young despite the passage of time. They seek personal and spiritual growth, and value career fulfillment and teamwork (Grossman 2000). They have witnessed tremendous technological change since their childhood and while sometimes intimidated by it, they desire a level of familiarity with new technologies as they emerge (Dempsey 2007).

## GENERATIONAL DIFFERENCES IN INFORMATION-SEEKING BEHAVIOR

We found a clear distinction in how Millennials and Baby Boomers tend to approach their search for information. However, both groups gravitate toward a blend of online and human sources when they search.

Millennial users are less concerned with format than they are with immediate delivery. They have higher than average tolerance for nonstandard grammar and punctuation, and will often settle for information that is “good enough.” While they tend to have shorter attention spans, they have broader attention ranges—their minds sometimes “leap about” like hypertext. They spend very little time using content, instead “squirreling” downloads and preferring quick chunks of information (Connaway and Dickey 2010).

Google is Millennials’ overwhelming first choice for information—for screenagers and graduate students alike. For screenagers, parents and friends are their second choice; graduate students also seek human sources for help, and they include academic superiors among those sources, generally because their research tends to be more sophisticated and exhaustive.<sup>1</sup>

Baby Boomers read more and use public libraries more than earlier generations. Most of them have Internet access and report that they would miss it if they could no longer use it.

Both Boomers and Millennials, though, prefer face-to-face (FtF) reference help to online interaction. Our research found that 80 percent of older adults who don’t use virtual reference prefer instead to build relationships and trust with knowledgeable librarians (Connaway, Radford, and Williams 2009).

Boomers who also are college or university faculty say they use Google for quick searches, but their first choice is personal libraries; and for human resources, they choose colleagues or other experts. They like the ease of finding information on the Internet, but they praise the virtues of physical library collections, too. Not surprisingly, faculty tend to use more sophisticated information-seeking methods as they have a much higher level of concern for authority and trustworthiness when evaluating sources. In addition to journals, databases and books available in the library, they gravitate more toward .org websites.

## POSITIVE PERCEPTIONS OF VIRTUAL REFERENCE

We sought to understand what Millennials and Baby Boomers think about VRS, by analyzing the reference questions that were submitted to librarians via a live chat environment, similar to instant messaging (IM). The research probed the perceptions and preferences of VRS users and non-users in both of the major age groups.

Some common, positive comments emerged from both age groups. Users appreciate the quick, on-target responses they receive from librarians, valuing those VR professionals “who know their stuff.” These users enjoy the convenience of VR, and appreciate personable and friendly exchanges. A great majority of VR users surveyed in this research indicate they would recommend it to others, and some initially tried it in response to someone else’s recommendation (especially found to be important to screenagers).

1. Unless otherwise noted, the data quoted are from Radford, Marie L., and Lynn Silipigni Connaway. 2005–2008. *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives*. Funded by the Institute of Museum and Library Services (IMLS). <http://www.oclc.org/research/activities/synchronicity/>.

Millennial users find that VR suits their liking for immediacy, and they find 24/7 late-night and weekend availability of VR appealing. They appreciate the convenience (i.e., not having to travel to the library and being able to communicate with a librarian from their desktops), and value reliable co-browsing and interfaces that can be personalized. A vast majority of Millennial respondents would recommend VR, which they find to be much less intimidating than FtF reference exchanges.

On the other hand, respondents who don't use VR report satisfaction with other sources for reference information, and don't mind visiting the library in person. They prefer FtF reference discussions and enjoy the personable, friendly information exchange. They also consider their own online searching skills to be sufficient.

Among Boomers, the differences between VR users and non-users mirrored those of Millennials. Boomers who use VR appreciate its convenience, and a vast majority would recommend it to others. Non-users again prefer the personal connection of FtF reference and find it more important than the convenience of VR.

## WHY NOT USE VR?

**For Boomers, problems with VR are technical; for Millennials, personal. For both, lack of knowledge that service exists tops the list of “why not?”**

We found that VR is not universally embraced, and for some of the positives, counterpart negative perceptions exist, particularly among Millennial users. What don't they like about VR?

Both Millennial and Boomers who use VR report problems with grumpy librarians who have poor communication skills and unhelpful attitudes. VR users find it annoying when a VR librarian asks if they have checked the library catalog directly—which is what they believe the VR librarian should do for them. Among younger Millennial users, the librarian stereotypes thrive: librarians are thought to be unhelpful, too oriented to books and likely to physically point them in a general direction rather than lead them to a more specific location to find resources in the library.

Millennial users also cite scripted messages and a “cold” chat environment as negatives for using VR, along with slow connections and VR librarians who provide unhelpful answers. Boomers note platform incompatibility as a negative aspect of their VR experiences.

Millennials who don't use VR offer a variety of reasons for this choice. Some reasons include their:

- fear that the VR technology will be complicated;
- fear of annoying or overwhelming the VR librarians and that follow-up questions may bother or “pester” the librarian;

## SEEKING SYNCHRONICITY: REVELATIONS AND RECOMMENDATIONS FOR VIRTUAL REFERENCE

- trust in their own abilities to evaluate Web-based resources sufficiently; and
- belief that they don't need librarian assistance.

Younger Millennials—screenagers—many of whom have been warned about the dangers of anonymous online chat environments, are sometimes apprehensive about VR chat because they don't know who they are corresponding with, perhaps an evil “psycho-killer.”

Graduate students also worry about being logged into chat rooms, but for a different reason: they worry about chat transcripts being made available to their professors, and fear negative judgments from librarians and advisors arising from the content of the transcripts.

Baby Boomers' reasons for not using VR are rooted more in their positive experiences in the physical library and their lack of comfort with using VR technology. Some examples include their:

- preference for FtF reference discussions and their personal relationship with the librarian;
- comfort with visiting the library, which they do not consider inconvenient;
- lack of experience using the phone or the online chat environment to pursue reference help from the library; and
- belief that their computer skills and slower typing speeds would hinder effective VR transactions.

The main reason that both Boomers and Millennials don't choose VR, however, is that they simply haven't a clue that it's available.

## INTERPERSONAL COMMUNICATION ASPECTS OF VIRTUAL REFERENCE

We interviewed Millennial and Baby Boomer VRS users about the ways in which they communicate with VR librarians to explore generational differences. Live chat transcripts were examined to reveal interpersonal aspects of chat communication and were divided into two groupings: Relational Facilitators and Relational Barriers that use and further develop a coding scheme developed by Radford (2006).

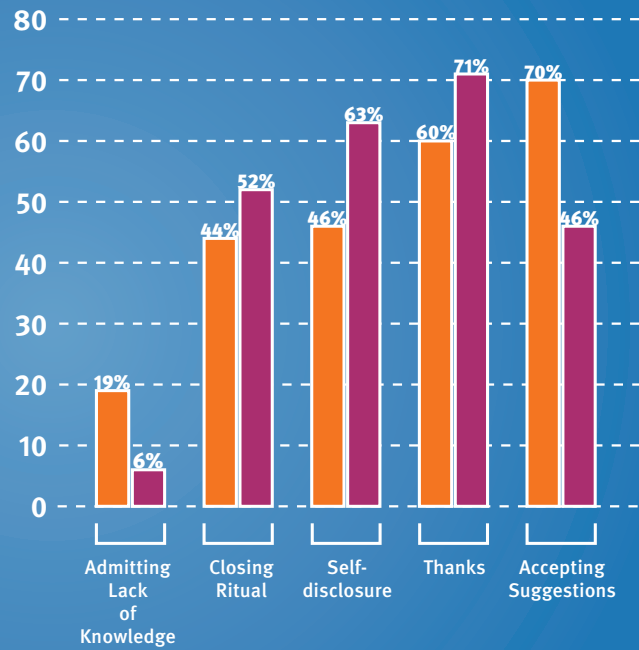
Relational Facilitators are the interpersonal aspects of chat that enhance communication. In general, Baby Boomers' VR chats included more of these positive traits than Millennials' chat sessions did, though Millennials were significantly more likely to respond deferentially to VR librarians:

### CHART 3.1

Relational Facilitators Demonstrated in Transcripts by Millennials and Baby Boomers

189 MILLENNIALS  
48 BOOMERS

Millennials  
Boomers



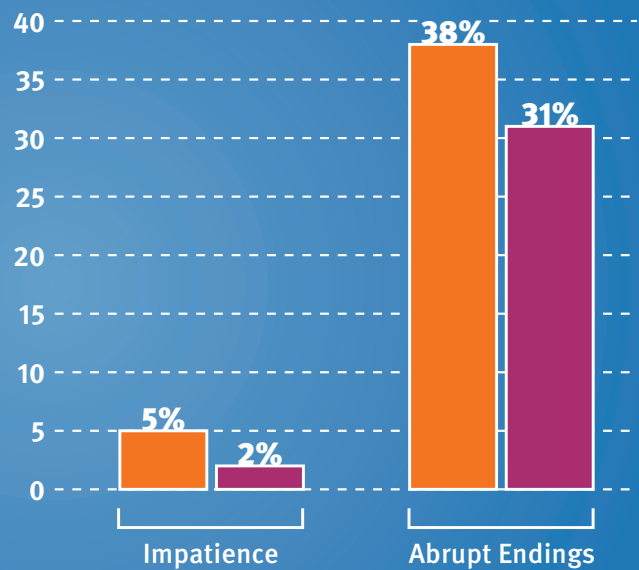
Relational Barriers are the interpersonal aspects of chat that hinder communication. Millennials reported higher incidence of these traits, though these barriers were reported less frequently than the positive facilitator traits.

### CHART 3.2

Relational Barriers Demonstrated in Transcripts by Millennials and Baby Boomers

189 MILLENNIALS  
48 BOOMERS

Millennials  
Boomers





Our research indicated that Millennial VR users attribute abrupt endings to their impatience or multitasking, which unfortunately often leaves the VR librarian not knowing if or why the chat seems to have ended. On the other hand, other studies have indicated that while librarians assume that rude behavior is prevalent among teens, transcript analysis found very low incidence of rude behavior from teens in the VR chat environment.

## RECOMMENDATIONS

So what do Millennials and Baby Boomers want from their libraries, particularly with regard to VRS? Our research suggests a few recommendations:

- Libraries that offer VR should promote it explicitly, both through marketing and word-of-mouth. All non-user groups studied indicate they would try VR if it were recommended by a trusted librarian, colleague or friend. Explicit recommendations from librarians to try VR help to reassure young people that librarians really do want them to use this type of service, and that there is a trustworthy “face” behind the technology. Promoting VR during FtF reference situations and in demonstrations during library use instruction also will help transfer the positive impressions that many users have of live library interactions into a library’s virtual spaces.
- Librarians should remember that teens may be hesitant to ask questions. Teens need reassurance that their questions are welcome—this is important for both FtF and VR interactions. They are sensitive to rejection, so tread gently and choose to tell them what you can do for them rather than what you can’t.
- Involve users in the development of VR to ensure that their needs and preferences are considered (Walter and Mediavilla 2005). The service should be flexible, customizable, allow for feedback, provide trusted guidance and include opportunities for social and interactive learning.
- Encourage users to enter library phone numbers into their cell phones to make it easier for them to call the library for quick reference help.

Virtual reference offers a lot of promise to information seekers of all generations if they are encouraged and welcomed by librarians to participate. Teens in particular carry over their stereotyped views of librarians into their decisions on whether or not to use VR. Thus, the stakes are high for maintaining the relevance and sustainability of reference services in the future as Google, Wikipedia and other sources compete for users’ attention.

## WHAT RESEARCH PARTICIPANTS TOLD US

### Screenager



*I wouldn't really trust my librarian. I trust Google."*

### Undergraduate students



*The thing about Google is that I generally find the little somethings under the search results and relevance to anything to actually be fairly good....You know, if I use the library catalog, it will give me a list of a thousand things, but there is really no ranking that I can understand."*

*"I stay away from the library and the library's online catalog."*

*"The library is a good source if you have several months."*

*"I've always thought that the library was a good source if you have a few months to spend on a paper."*

*"Hard to find things in library catalog."*

*"Tried [physical] library but had to revert to online library resources."*

*"Yeah, I don't step in the library anymore...better to read a 25-page article from JSTOR than 250-page book."*

*"[I] go to Google...can [pinpoint]...I will find Google articles and then [go] to library and find a couple articles...."*

*"Well, I have our library [Web page] here open and...there's a lot of information and there's nowhere to search. This is the opening to the catalog but there's no box to search."*

*"Make a universal library card that would work in all libraries."*

## Graduate students



*You need to know which database with abstracting, indexing...Google, I don't have to know, I go to one spot."*

*"I have been going to library Web sites and using their stuff...e.g., EBSCO... Library as portal to online sources...will also go to university library...and search [for] articles I need."*

*"[I] don't use university online system. Don't like it."*

*"I'm not trust[ing] everything that's on the Internet, but I will print off all the information and I got ideas that I will also go to the university library and search some article I need."*

*"Without Google, it takes away that initial familiarizing yourself with what's out there. We wouldn't know what the good keywords were when we go to a more academic database."*

*"More staff, roaming personnel."*

*"Book delivery from library through campus mail."*

*"I just go ask my dad, and he'll tell how to put in a fence, you know? So why sort through all this material when he'll just tell me."*

*"Yeah, the utility of it. How useful is it? If [it's] like they went there and it took twenty minutes and I didn't even get my question answered. I'd be like, 'I'm not going to do that.'"*

*"I obviously turn to electronics first, then the library second...because it's convenient. But if I want more in-depth info, then I go to the library."*

## Faculty



*Google is my first place to find something quickly."*

*"[Google] is user friendly...library catalog is not."*

*“Yeah, well, actually I was going to be different and not say Google. I do use Google, but...[I also] use two different library homepages...and I will go into the research databases...do a search there and then I will end [up]...limiting myself to the articles that are available online.”*

*“If I have a student mention a book and I’m not familiar with that book, Amazon.com gives me a brief synopsis...reader reviews of the book, so it’s a good, interesting first source to go to for that kind of information.”*

*“Before I came to the library to use the MLA database, I did a Google search and it turns out that there is a professor at Berkeley who keeps a really, really nice and fully updated...page with bibliographic references.”*

*“I’m suspicious of people who are publishing on-line because usually the peer review is much less rigorous.”*

*“I find Google really, really useful as a fast familiarizing tool.”*

*“Lower the intimidation factor.”*

*“Better signage and extra pathfinders.”*

*“Book store environment.”*

## REFERENCES

Connaway, Lynn Silipigni, and Timothy J. Dickey. 2010. *Towards a profile of the researcher of today: The digital information seeker: Report of findings from selected OCLC, RIN, and JISC user behaviour projects*. <http://www.jisc.ac.uk/media/documents/publications/reports/2010/digitalinformationseekerreport.pdf>.

Connaway, Lynn Silipigni, Marie L. Radford, and Jocelyn DeAngelis Williams. 2009. “Engaging Net Gen students in virtual reference: Reinventing services to meet their information behaviors and communication preferences.” In *Pushing the Edge: Explore, Extend, Engage: Proceedings of the Fourteenth National Conference of the Association of College and Research Libraries, March 12–15, 2009, Seattle, Washington*, edited by Dawn M. Mueller, 10–27. Chicago: Association of College and Research Libraries. <http://www.oclc.org/research/publications/archive/2009/connaway-acrl-2009.pdf>.

Dempsey, Beth. 2007. “What Boomers want.” *Library Journal* 132, no. 12: 36–39.

## SEEKING SYNCHRONICITY: REVELATIONS AND RECOMMENDATIONS FOR VIRTUAL REFERENCE

Grossman, Terry. 2000. *The Baby Boomers' guide to living forever*. Golden, CO: Hubristic Press.

Radford, Marie L. 2006. "Encountering virtual users: A qualitative investigation of interpersonal communication in chat reference." *Journal of the American Society for Information Science and Technology* 57, no. 8: 1046–59.

Radford, Marie L., and Lynn Silipigni Connaway. 2005–2008. *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives*. Funded by the Institute of Museum and Library Services (IMLS). <http://www.oclc.org/research/activities/synchronicity/>.

Rushkoff, Douglas. 1996. *Playing the future: How kids' culture can teach us to thrive in an age of chaos*. New York: HarperCollins.

Walter, Virginia A., and Cindy Mediavilla. 2005. "Teens are from Neptune, librarians are from Pluto: An analysis of online reference transactions." *Library Trends* 54, no. 2: 209–27.

White, David. 2008. "Not 'natives' & 'immigrants' but 'visitors' & 'residents.'" *TALL Blog: Online Education with the University of Oxford*, April 23. <http://tallblog.conted.ox.ac.uk/index.php/2008/07/23/not-natives-immigrants-but-visitors-residents/>.

## ADDITIONAL READINGS

Connaway, Lynn Silipigni. "Make Room for the Millennials." *NextSpace* 10 (2008): 18–19. <http://www.oclc.org/nextspace/010/research.htm>.

———. "Mountains, Valleys, and Pathways: Serials Users' Needs and Steps to Meet Them. Part I: Identifying Serials Users' Needs: Preliminary Analysis of Focus Group and Semi-Structured Interviews at Colleges and Universities." *Serials Librarian* 52, no. 1–2 (2007): 223–36. <http://www.oclc.org/research/publications/archive/2007/connaway-serialslibrarian.pdf>.

Connaway, Lynn Silipigni, and Marie L. Radford. "Service Sea Change: Clicking with Screenagers Through Virtual Reference." In *Sailing into the Future: Charting Our Destiny: Proceedings of the Thirteenth National Conference of the Association of College and Research Libraries*, March 29–April 1, 2007, Baltimore, Maryland, edited by Hugh A. Thompson. Chicago: Association of College and Research Libraries, 2007. <http://www.oclc.org/research/publications/archive/2007/connaway-acrl.pdf>.

———. "Virtual Reference Service Quality: Critical Components for Adults and the Net-Generation." *Libri* 60, no. 2 (2010): 165–80.

Connaway, Lynn Silipigni, Marie L. Radford, Timothy J. Dickey, Jocelyn DeAngelis Williams, and Patrick Confer. "Sense-making and Synchronicity: Information-seeking Behaviors of Millennials and Baby Boomers." *Libri* 58, no. 2 (2008): 123–25. <http://www.oclc.org/research/publications/archive/2008/connaway-libri.pdf>.

Prabha, Chandra, Lynn Silipigni Connaway, Lawrence Olszewski, and Lillie Jenkins. "What is Enough? Satisficing Information Needs." *Journal of Documentation* 63, no. 1 (2007): 74-89. <http://www.oclc.org/research/publications/archive/2007/prabha-satisficing.pdf>.

Radford, Marie L., and Lynn Silipigni Connaway. "'Screenagers' and Live Chat Reference: Living Up to the Promise." *Scan* 26, no. 1 (2007): 31–39. <http://www.oclc.org/research/publications/archive/2007/connaway-scan.pdf>.

4

“WAY SWEET” OR “JUST WRONG:”  
CRITICAL FACTORS FOR VIRTUAL  
REFERENCE SUCCESS



For virtual reference services (VRS) to succeed, they need to effectively meet the information-seeking needs of their users. But what makes VRS effective? Our research indicates that asking people to remember and describe positive and negative “critical incidents” in their virtual reference (VR) experiences enable us to determine the important factors that either enhance or hinder their perceptions of VR success.

Introduced in an article by John Flanagan, the qualitative “Critical Incident” (CI) technique focuses on participants’ most memorable events or experiences, usually relating to a service or product. It allows for important categories or themes to emerge from the service users’ descriptions, rather than be imposed by researchers.

In order to find out what users most highly value (or dislike) about VR, we asked VRS librarians and users these CI questions:

- Think about one experience in which you felt a chat reference encounter achieved (or did not achieve) a positive result.
- Describe the circumstances and nature of the reference query.
- Describe why you felt this encounter was (was not) a success.

We also added an additional question for the VRS users:

- Did the chat format help your experience to be successful/unsuccessful? If yes, how?

For non-users of VRS, the questions were very similar, but they solicited comment on the other reference format(s) the non-users experienced, including face-to-face (FtF), phone, e-mail and SMS text messaging.

## WHAT’S HOT

So what were critical factors for the users for VR success? Our research suggests that three broad factors affect users’ perceptions of a positive VR encounter.<sup>1</sup> They value the librarian’s

- knowledge, and accuracy of answers/information;
- positive attitude; and
- communication skills.

Providing accurate answers is a fairly straightforward requirement. While it is impossible for every librarian to be an expert in every field in which VR questions arise, it is important to recognize that users expect to get information from the interaction that is qualitatively better than what they could

1. Unless otherwise noted, the data quoted are from Radford, Marie L., and Lynn Silipigni Connaway. 2005–2008. *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives*. Funded by the Institute of Museum and Library Services (IMLS). <http://www.oclc.org/research/activities/synchronicity/>.



find on their own. Users told us that if they could find the information in a quick Web search (or by asking a friend or family member), they would not be coming to us with their queries via VR. They come for the value added by the professional.

It also is vitally important to remember to “show your smile” in VR. As far as relationships go, many factors contribute to a positive VR interaction. These include interpersonal issues such as attitude, relationship quality and rituals of polite behavior; skill-related factors, such as the ability to teach, convey information and demonstrate knowledge; and convenience/ease of use. Each factor listed below is illustrated with comments from VR users and librarians in the “quotes” section at the end of this chapter.

### **Librarians value the following interpersonal aspects in a VR setting with users who:**

- approach with a willingness to explain their needs openly;
- are agreeable to receiving help;
- demonstrate ordinary politeness and common courtesy (e.g., use please and thank you); and
- are able to admit a lack of knowledge.

### **And users value relationships with VR librarians who:**

- offer opinions/advice;
- explain search strategy;
- are less formal (e.g., use lowercase font or chat speak);
- encourage the users during the reference encounter;
- use personal greetings;
- let users know when a search will take time and ask for patience; and
- warn users before abruptly signing off or disconnecting.

VRS is more likely to have repeat users when VR librarians engage in the above characteristics and behaviors, which are referred to as relational facilitators. Offering advice and reassurance based on the needs expressed by the user is key to establishing a good VR relationship, as is managing user expectations during the interaction.

### WHAT'S NOT

It follows—and is supported by our research—that much of what tends to cause VRS to fail consists of the opposite of what makes it succeed. Interpersonal dimensions that impede communication are referred to as relational barriers. Negative attitudes, lack of politeness rituals, lackluster relationship quality, and poorly executed or insufficient skills for locating information or instructing users also impede the success of VRS.

In our research, VR librarians reported a small number of relational barriers from users that diminish the effectiveness of VR transactions. These were frequently attributed to younger users, including a few who librarians felt wanted VR librarians to complete their school assignments. In our research, these young users often just need some help in getting started and are unsure how to ask for help. They may be unwilling to admit that they haven't a clue how to begin.

Relational barriers reported by VR librarians include users who are:

- impatient;
- rude or insulting; and
- unreceptive to suggestions.

The VR users we studied reported some instances of unsuccessful VR transactions that they attributed to the performance of the librarian. Users reported unsuccessful VR experiences that involved one or more of the following characteristics:

- ending the session abruptly;
- limiting the time of the session;
- sending users to Google for answers;
- reprimanding the user; and
- failing or refusing to provide information.

We also found that of all the VRS users who participated in the telephone interviews (N=76), 42% (32) of them are willing to wait for access to a subject specialist. This revelation means that subject expertise is an important consideration and something to work toward. Some users identified incorrect or incomplete answers from librarians who were not subject specialists as a factor in unsuccessful interactions. Seven percent (5) of all VRS online survey respondents (N=68) and 18% (6) of all telephone interviewees (N=34) reported “inaccuracy” as a cause for a negative experience; 11% (4) of older adult users (N=38) and 17% (5) of Millennial users (N=30) (those

born from 1979–1994) reported that the VR librarian was unable to locate specific resources needed and seem to prefer electronic interfaces that offer more choice/selectivity, flexibility/convenience and personalization/customization options; and 10% of Millennial users reported an overall lack of knowledge on the librarian’s part as causing a negative interaction. When describing positive interactions, Millennial users (N=48) cited “accurate answers” 29% (14) of the time as the factor, and “quick assistance” in 13% (6) of the cases. The data suggest that slowing down and providing higher-quality information (from a subject specialist if possible) is more important to a positive reference encounter than answering quickly.

Our research also included gathering input from library users who don’t use VRS. What they said is very similar to what their VR-using counterparts reported: attitudes, relationship quality, polite rituals and information-seeking skills can determine how successful or unsuccessful a VR interaction can be from the user’s perspective.

Similarly, we found that users are not as interested in receiving instruction as librarians are in giving it, although they are more receptive in face-to-face (FtF) encounters. While willing to wait for good content, they are not necessarily willing to spend the time “learning to fish” for themselves. We suggest that you both give them the information (the fish!) while providing instruction as desired by the user (e.g., by asking: “Would you like to know more about how I found this information?”) Being sensitive to user needs will result in more “teachable moments” than forcing instruction, which may frustrate the user. Interestingly, we also found that VRS librarians reported that instruction in VR was actually more effective than FtF when they had that teachable moment, because they had the user’s full attention.

## RECOMMENDATIONS

Although it’s very important to VR users to receive needed information, relational factors have a notable impact on the user’s perception of a successful VR transaction. In our research, users cited a positive librarian attitude and the quality of the relationship with the librarian as important factors in their satisfaction with VR services.

For non-users of VR, relational factors are also important, but when they reported negative incidents, more of them focused on content-related issues than on relational issues. They wanted delivery of specific information more often than general directions on how to find it.

What does this mean for libraries that wish to offer VRS? First, keep in mind that VR users want access to information that is accurate, convenient and timely. They also want to develop a good relationship with their librarian. VR librarians want clear questions, user feedback for query clarification, positive user attitudes, software issues resolved in advance and the ability to serve diverse users.

## SEEKING SYNCHRONICITY: REVELATIONS AND RECOMMENDATIONS FOR VIRTUAL REFERENCE

This leads us to the following recommendations when it comes to establishing positive VR interactions:

**First, provide specific and accurate answers.** The fastest way to turn off a user to your VR service is to give poorly researched, sloppy or vague information.

**Take your time.** Users are open to waiting for quality information, especially if the librarian asks them politely to be patient and sets accurate expectations about how long the process will take. When possible, connect users to a specialist and/or give a referral to a subject specialist as appropriate.

**Pay attention to the “close.”** Users report a negative reaction to an abrupt ending to the VR interview and to feeling that the librarian was limiting their time. Be personal in your closing rather than just pushing an impersonal script. Adding a “Bye, take care” or other similar, informal closing is recommended.

**Always, always, always be pleasant and polite.** In almost every society, admitting ignorance and asking for help is considered a passive and “needy” activity. In FtF encounters, much of the negative social stigma associated with asking questions can be mitigated by normal, friendly, inviting behavior on the part of the librarian. In VR situations, though, many of the positive emotional and social cues are missing. A response that a VR librarian intends to be simply concise can be interpreted as brusque or rude. Taking the time to add encouraging remarks, asking for patience, using a pleasant greeting and personal closing, and explaining what’s going on are all ways to “sound” friendly when you can’t do so in person. Use your basic service excellence skills.

These recommendations are appropriate, of course, for any VR interaction. They are especially important, though, for creating positive reference interactions. For example, ask the user if this is the first time using VR. If it is, there’s a very good chance that you’re about to determine their attitude about the service for a long time to come. The absolute definition of a “win” is simple—do they come back to use the service again? Do they recommend VRS to their friends? If they have had positive encounters they will come back and they will tell others to try VRS.

## WHAT RESEARCH PARTICIPANTS TOLD US

### Examples of positive and negative factors that deal with relational dimensions:

#### Positive attitude



*...the librarian and I were unsuccessful in locating the copy, but she did a great job in her search. The quick, to the point conversation, was very warm, intimate, so fast and she used my name. I liked that.” –Older Adult VR user*

*“She was very polite, very helpful, courteous, and gave me the reference where she found my answer. It was wonderful!” –Older Adult VR user*

### Building familiarity



*I had a patron use chat to ask about connecting to library databases....I was able to add the patron so he could connect. He then came back to ask for guidance in selecting appropriate articles. He returned a third time to be guided through finding what he could get online and what needed to request via ILL. The patron went away satisfied that he could get what he needed....He has returned at other times with other questions.” –VR librarian*

### Relationship quality



*The librarian was able to guide me through a research problem clearly and thoroughly, assisting me step-by-step. The librarian helped me step-by-step, instead of rushing me through, she was able to work slowly with me.”*

*–Older Adult VR user*

### Providing information



*I was able to pinpoint nature of request with clarifying questions. I was able to find info that looked good...customer took the time to look through first submission while I searched a second site. Customer gave positive feedback...I was able to ask if the info was sufficient, receive an affirmative response and send the closing script. This encounter seemed like the way VR is supposed to work.” –VR librarian*

### Providing instruction



*I was looking for achievements of the Celtic civilization. I needed one more category. I came out not with the answer, but the MEANS of finding the answer...I managed to find a topic on which there was SO much, I could hardly believe I missed it.” –Screenager VR user*

[ Note: Rushkoff (1996) refers to the younger members (12–18-year-olds) of the Millennial Generation as “screenagers” because of their affinity for electronic communication via computer, phone, television, etc., screens.]

### Demonstrating knowledge



*I have had many positive chat experiences...just a week ago I interacted with a long-distance patron who was doing genealogy work. With my experience in that subject area we had a great conversation and the session continued with e-mail follow-up for several days.” –VR librarian*

### Convenience



*The question was pertaining to a precalculus problem.... The librarian asked me what I already know...and together we solved the problem and even double-checked it...we came to a solution rather efficiently and quickly.” –Millennial VR user*

*“The chat format did help my experience to be successful because I was able to multi-task while the librarian did the search.” –Older Adult VR user*

### Query clarification



*Because I was able to have a conversation and get feedback as I sent pages to cull out what the patron had already seen and to more thoroughly define what he needed. It was very rewarding....” –VR librarian*

### Positive feedback



*Student gave immediate feedback that I was helpful and thanked me!” –VR librarian*

*“They are just very, very appreciative students. You gets lots of chat shorthand, like ‘omg, that was great.’” –VR librarian*

### Negative attitude



*I asked a question...about comparative religion and the person did not take the time to ask me the questions and I guess he seemed a little annoyed that I would use chat reference anyway.” –Older Adult VR user*

### Relationship quality



*A student was looking for information about Vasco de Gama. The patron didn’t respond to my questions. I would send a site and ask if she could see it and if it was helpful. She would not say, but would continue to ask me other*

*questions. The encounter was not a success because we didn't actually have a conversation.” –VR librarian*

### Unrealistic expectations



*A student came in with a query something like: ‘What was the motivation behind character x’s actions in...Macbeth. How does that relate to modern society?’ She had a specific list of homework questions and was totally uninterested in resources about the play or the character. She simply wanted the answer and she wanted it now.” –VR librarian*

### Technology impact



*Someone logged on whose typing skills were severely lacking, and I could not understand the question. When I finally understood, the patron got angry and said he was not able to type. I couldn't figure out why someone who was uncomfortable typing would choose virtual reference as a conduit. We did not understand each other and the technology (even a keyboard) was prohibitive for the patron.” –VR librarian*

## Examples of negative factors that deal with information dimensions:

### Lack of information



*I needed information on the West for a book a student was reading. The person did not listen to the question and gave the wrong information. The person did not listen to my needs and did not answer the question.” –Older Adult VR user*

### Lack of instruction



*I went to get help to access the databases and the librarian just handed me a piece of paper with instructions. The instructions were not clear and I found them rather confusing.” –Older Adult VR user*

### Lack of knowledge



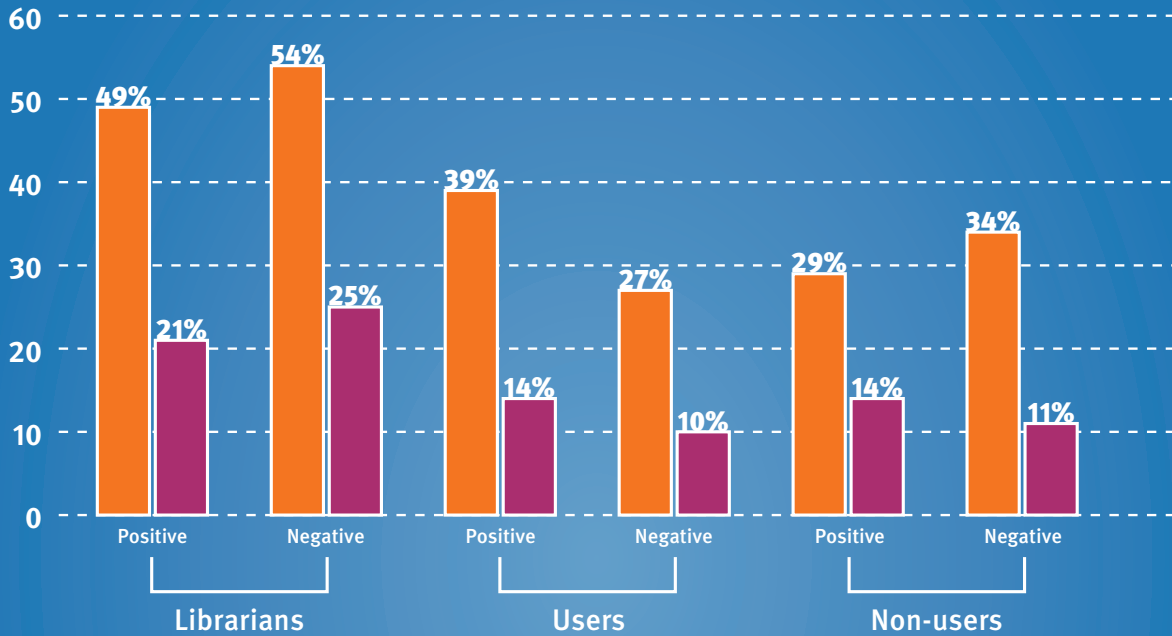
*She was only able to start the program, a step I already knew how to do. However, she was not knowledgeable about the software that was on the computers at the library.” –Millennial VR user*

## HOW THE DATA STACK UP

### CHART 4.1

Impact of Relational Themes on Positive and Negative VRS Experiences  
Online Survey

- Attitude
- Relationship Quality

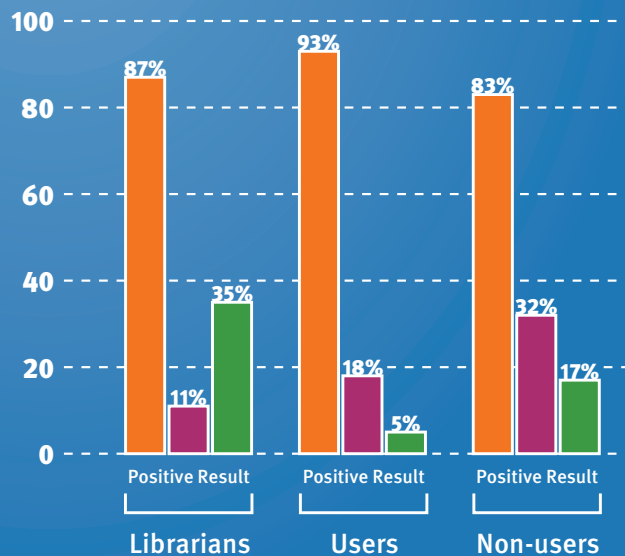


### CHART 4.2

Impact of Content Themes on Positive VRS Experiences  
Online Survey

**143 LIBRARIANS**  
**57 USERS**  
**149 NON-USERS**

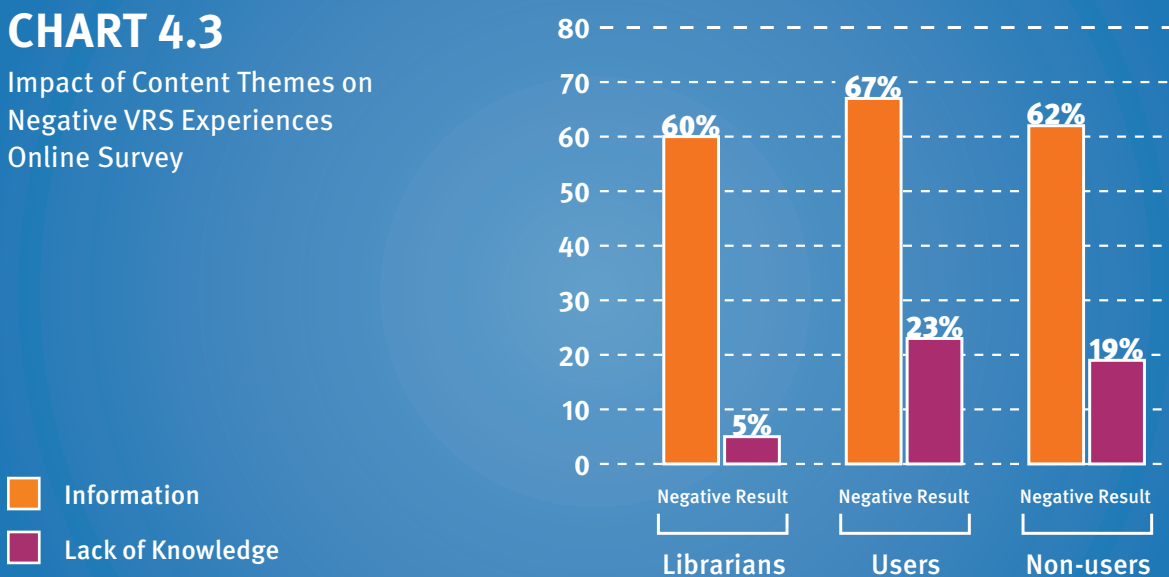
- Providing Information
- Demonstrating Knowledge
- Providing Instruction





**CHART 4.3**

Impact of Content Themes on  
Negative VRS Experiences  
Online Survey

**REFERENCES**

Radford, Marie L., and Lynn Silipigni Connaway. 2005–2008. *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives*. Funded by the Institute of Museum and Library Services (IMLS). <http://www.oclc.org/research/activities/synchronicity/>.

Rushkoff, Douglas. 1996. *Playing the future: What we can learn from digital kids*. New York: Harper Collins.

**ADDITIONAL READINGS**

Connaway, Lynn Silipigni, and Marie L. Radford. “Convenience, Connections, Correctness, and Choice: Critical Components of Virtual Reference Service Quality.” Paper presented at the *i3 information: interactions and impact Conference*, Aberdeen, Scotland, June 22–25, 2009. <http://www.oclc.org/research/projects/synchronicity/ppt/20090624-i3.ppt>.

———. “Virtual Reference Service Quality: Critical Components for Adults and the Net-Generation.” *Libri* 60, no. 2 (June 2010): 165–80.

———. “‘Way sweet’ or ‘just wrong’: Users and Librarians Reveal Critical Factors for Virtual Reference Service Excellence.” Presented at the ALA 2009 Annual Conference, Chicago, Illinois, July 11, 2009. <http://www.oclc.org/research/projects/synchronicity/ppt/20090709-ala.ppt>.

Connaway, Lynn Silipigni, Marie L. Radford, and Jocelyn DeAngelis Williams. "Engaging Net Gen Students in Virtual Reference: Reinventing Services to Meet Their Information Behaviors and Communication Preferences." In *Pushing the Edge: Explore, Extend, Engage: Proceedings of the Fourteenth National Conference of the Association of College and Research Libraries, March 12–15, 2009, Seattle, Washington*, edited by D. M. Mueller, 10–27. Chicago: Association of College and Research Libraries, 2009. <http://www.oclc.org/research/publications/archive/2009/connaway-acrl-2009.pdf>.

Flanagan, John C. "The Critical Incident Technique." *Psychological Bulletin* 51, no. 4 (July 1954): 327–58.

Ozkaramanli, Eylem. "Librarians' Perceptions of Quality Digital Reference Services by Means of Critical Incidents." PhD diss., University of Pittsburgh, 2005.

Radford, Marie L. "The Critical Incident Technique and the Qualitative Evaluation of the Connecting Libraries and Schools Project." *Library Trends* 54, no. 1 (Summer 2006): 46–64.

Radford, Marie L., and Lynn Silipigni Connaway. "Connecting in Cyberspace: The Millennial Generation and Virtual Reference Service." Presented to the panel, Behaviors and Preferences of Digital Natives: Informing a Research Agenda at the American Society for Information Science and Technology 2007 Annual Meeting, Milwaukee, Wisconsin, October 18–25, 2007. <http://www.oclc.org/research/projects/synchronicity/ppt/asist07.ppt>.

———. "Cordial Connections: Evaluating Virtual Reference from User, Non-user, and Librarian Perspectives Using the Critical Incident Technique." In *Proceedings for the LIDA 2008 (Libraries in the Digital Age) Conference, Dubrovnik and Mljet, Croatia, June 2–7, 2008*, edited by Josipa Selthofer, Tatjana Aparac-Jelusic, and Maja Krtalic, 56–67. <http://www.oclc.org/research/projects/synchronicity/resources/lida2008-radfordconnaway.pdf>.

———. "'I Stay Away from the Unknown, I Guess.' Measuring Impact and Understanding Critical Factors for Millennial Generation and Adult Non-users of Virtual Reference Services." In *Online Proceedings of the Fifth Annual iConference, University of Illinois at Urbana–Champaign, February 3–6, 2010*. [http://nora.lis.uiuc.edu/images/iConferences/2010papers2\\_Page-Zhang.pdf](http://nora.lis.uiuc.edu/images/iConferences/2010papers2_Page-Zhang.pdf).

———. "Users and Librarians Engaging in Virtual Spaces: Using Critical Incidents to Inform Practice and Education in Chat Reference." Presented at the ALISE Conference, Philadelphia, Pennsylvania, January 8–11, 2008. <http://www.oclc.org/research/projects/synchronicity/ppt/alise2008.ppt>.

# QUESTIONS ABOUT QUESTIONS— THE IMPORTANCE OF QUERY CLARIFICATION



### **The need to more clearly define what specific information the user needs is paramount to a successful virtual reference (VR) session.**

Mention “query clarification” to a Web searcher and she or he may think about how best to request information from a database or search engine.

Mention the terms to a systems developer and images of Structured Query Language (SQL) and other specialized computer languages may jump to mind.

But to librarians, query clarification is the essential element of the venerable reference interview—the process of refining a user’s question in order to provide a useful, relevant answer. Sometimes referred to as question negotiation, query clarification goes on in face-to-face (FtF) interviews as well as in phone and VR interactions. It is one of the distinguishing factors that separates professional librarianship from Web Q&A services, and enables a reference staff member to determine the precise information needs of the user.

In order to provide an analysis of query clarification in the rapidly growing live, reference chat environment, we studied 850 randomly selected reference transcripts from OCLC’s QuestionPoint, an international chat consortium (Radford and Connaway 2005–2008). This IMLS, OCLC and Rutgers University-supported project is among the first studies to scrutinize a large sample of reference transcripts for detailed qualitative analysis in order to gauge the occurrence and success of query clarification in online reference.

Our research indicates that librarians and users engage in two strikingly different patterns of query clarification. More than half of the librarians’ clarifications occur before the search stage, with the percentage of clarifications dropping during and after the search.<sup>1</sup> On the other hand, users offer clarifying information most often during the search, and much less frequently before and after the search stage. This pattern indicates that users offer information in response to librarians’ queries, as might be expected. In addition, the transcripts indicate that some users realize that the librarian is on the wrong track and want to remedy the situation. It also is possible that users find that a page pushed to them is off-target and they recognize the need to offer additional information during the search process to correct misunderstandings regardless of whether the librarian has asked for it.

## WHAT’S HOT

**Query clarification is needed:** Our analysis revealed that only 4% (24) of interactions did not need some type of additional dialogue to further define the question. And librarians are asking questions for clarification; 74% (438) of librarians asked clarifying questions in VR encounters. This rate is higher than those reported in FtF reference studies, which find that query clarification is done in between 45–60% of interactions (Gers and Seward 1985; Dewdney and Ross 1994; Ross and Nilsen 2000).

1. Unless otherwise noted, the data quoted are from Radford, Marie L., and Lynn Silipigni Connaway. 2005–2008. *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives*. Funded by the Institute of Museum and Library Services (IMLS). <http://www.oclc.org/research/activities/synchronicity/>.

**Query clarification improves the quality of VR answers:** Our research reports that 73% (72 of 98 questions) of correctly answered, ready-reference questions were clarified as opposed to 21% (21 of 98 questions) that were correctly answered without clarification. So asking questions definitely boosts accuracy.

**A variety of clarifying questions:** Almost half (45%, 196 of 436 respondents) of the VR librarians we studied sought additional subject information, while about a third (31%, 135) asked for more background on the question, such as deadline and project requirements. One-fifth (87) verified their understanding of the question by restating it, and 19% (83) asked which sources and search strategies had already been tried by the user. More than 10% (48) asked about both the type of resources desired—book, article, online information—and the depth of information needed—summary or detailed history. Only 4% (17) of librarians asked whether the user wanted to be referred to a subject expert or another library or librarian.

**Clarifying questions from users.** Our transcript analysis provided a unique opportunity for us to study the behavior of both librarians and users in the back and forth of the VR encounter. Our research is among the first to study query clarification by users as well as librarians. We found that users engaged in clarification 22% (130) of the time by offering additional information about the question. Users offered information both in response to librarians' questions and spontaneously, without librarian prompting. More than half (52%, 69) offered additional subject information while 24% (32) provided background information, such as class- or grade-level data. One-fifth of users (20%, 26) elaborated on the amount of information needed and 14% (18) revealed the sources and search strategies they already had used.

**Verifying that needs are met:** More than half (52%, 219) of the librarians who clarified the user's question closed the interview with "Does this completely answer your question?" or some variant of that question. This has proven to be a tried and true strategy for increasing user satisfaction in FtF reference research (Ross, Nilsen, and Radford 2009).

## WHAT'S NOT

**Using "closed" questions in online interactions with users:** Librarians used closed questions (67%, 569) twice as often as open questions (33%, 285) as a clarifying technique, which suggests that librarians may be worried about time pressure and may be rushing to closed questions too quickly. Meanwhile open questions used to refine their understanding of the questioner's information needs in the presearch stage of the VR interaction is seen in our sample to actually save time. Librarians who do not clarify before searching may go on a wild goose chase for the wrong information. School or work assignments ("imposed queries") (Gross 1995, 1997), which may not be open to the same question negotiation techniques as personal information needs ("self-generated queries") (Gross 1999), were 26% (151 of 592 interactions) of the analyzed chat reference interactions. Of the 26% (151), 24% (36) were school or academic assignments. A slightly

higher number of interactions (29%, 171 of 592 interactions) were self-generated queries. Query type—imposed or self-generated—could not be determined 46% (270 of 592 interactions) of the time, which indicates that librarians did not clarify by asking about query type in almost half of the interactions we analyzed.

**Not clarifying reference questions:** A review of one reference transaction illustrates why asking a user for more information is not only good practice but also important for service excellence. In this case, the user asked: “if a 15 year old can start diving classes now.” After saying, “One moment please. I will see what I can find,” the librarian begins to search and then, after several minutes, replies: “After looking at a few websites it seems that beginning scuba diving classes start at age 12 to 16. It depends on how good a swimmer the person is. As a scuba diver myself I think the age range sounds right.” The user then responds: “I don’t want scuba diving classes I want driving classes.” Although the user typed the word “diving” instead of “driving,” to trigger the misunderstanding, the librarian wasted valuable time searching when a quick clarification via a closed question (e.g., “Do you mean scuba diving or sky diving?”) would have immediately revealed the typo. Later the user grows impatient with waiting for a reply and logs off abruptly.

## RECOMMENDATIONS

Here are our recommendations based on our research.

**Asking clarifying questions** enhances accuracy and is recommended for almost all VR questions, even those that seem obvious upon first glance.

**Questions related to school assignments constitute 24% (36) of “imposed” queries**, in which an assignment is given to a student to research. This result indicates that approximately a quarter of the students, from a wide range of educational levels, are users of chat reference. The practice of question negotiation should be attuned to the special needs of school assignments, as well as to the general difficulty of negotiating formally and informally imposed queries.

**Determine query type.** Since query type could not be determined in nearly half of the transcripts (46%, 270 of 592 transcripts), either librarians did not clarify by asking about query type and/or users did not volunteer this information; therefore, VR librarians should heighten their awareness of the importance of and techniques for determining query type in every chat reference interaction. This process can be tricky as users may be put off by the closed question: “Is this a homework assignment?” which is better asked as an open question: “Can you tell me more about what you will do with this information?” Similarly asking, “Have you already checked the online catalog?” has found to result in users logging off abruptly (perhaps shamed by not having done something obvious before seeking help). Again, saying something more neutral such as, “Have you had a chance to get started?” or “What stage are you in in your research?” can be gentler and more effective in getting the user to open up.

**Use open questions.** Findings that librarians use twice as many closed (67%, 569) as open (33%, 285) questions indicates that VRS training should stress the importance of open questions in gathering pertinent information and improving the effectiveness of the reference interaction—especially in the early part of the encounter.

**Pay attention to the closing.** Training should include instruction for librarians to close each interaction with, “Does this completely answer your question?” or a similar question such as, “Do you have enough information to get started?” to improve users’ satisfaction with VR services.

## REFERENCES

Dewdney, Patricia, and Catherine Sheldrick Ross. 1994. “Flying a light aircraft: Reference service evaluation from a user’s viewpoint.” *RQ* 34, no. 2: 217–30. <http://www.unc.edu/~bwilder/inls500/dewdney11.pdf>.

Gers, Ralph, and Lillie J. Seward. 1985. “Improving reference performance: Results of a statewide study.” *Library Journal* 110, no. 18: 32–35.

Gross, Melissa. 1995. “The imposed query.” *RQ* 35, no. 2: 236–43.

———. 1999. “Imposed versus self-generated questions: Implications for reference practice.” *Reference & User Services Quarterly* 39, no. 1: 53–61.

———. 1997. “Pilot study on the prevalence of imposed queries in a school library media center.” *School Library Media Quarterly* 25: 157–66.

Radford, Marie L., and Lynn Silipigni Connaway. 2005–2008. *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives*. Funded by the Institute of Museum and Library Services (IMLS). <http://www.oclc.org/research/activities/synchronicity/>.

Ross, Catherine Sheldrick, and Kirsti Nilsen. 2000. “Has the Internet changed anything in reference? The library study, phase 2.” *Reference & User Services Quarterly* 40, no. 2: 147–55.

Ross, Catherine Sheldrick, Kirsti Nilsen, and Marie L. Radford. 2009. *Conducting the reference interview*. 2nd ed. New York: Neal-Schuman.

## ADDITIONAL READINGS

Curry, Evelyn L. "The Reference Interview Revisited: Librarian-patron Interaction in the Virtual Environment." *Simile* 5, no. 1 (February 2005). <http://utpjournals.metapress.com/content/d7k28457m327v81l/fulltext.pdf>.

Doherty, John J. "Reference Interview or Reference Dialogue?" *Internet Reference Services Quarterly* 11, no. 3 (2006): 95–107.

Gross, Melissa. "The Imposed Query." In *Theories of Information Behavior*, edited by Karen E. Fisher, Sandra Erdelez, and Lynne (E. F.) MacKechnie, 164–68. Medford, NJ: Information Today, 2005.

Janes, Joseph, and Joanne Silverstein. "Question Negotiation and the Technological Environment." *D-Lib Magazine* 9, no. 2 (2003). <http://www.dlib.org/dlib/february03/janes/02janes.html>.

Mabry, Celia Hales. "The Reference Interview as Partnership: An Examination of Librarian, Library User, and Social Interaction." *The Reference Librarian* 83–84 (2003): 41–56.

Marsteller, Matthew R., and Dorianne Mizzy. "Exploring the Synchronous Digital Reference Interaction for Query Types, Question Negotiation, and Patron Response." *Internet Reference Services Quarterly* 8, no. 1–2 (2003): 149–65.

Radford, Marie L., Lynn Silipigni Connaway, Patrick Confer, Susanna Sabolsci-Boros, and Hannah Kwon. "'Are We Getting Warmer?' Query Clarification in Live Chat Virtual Reference." *Reference & User Services Quarterly* 50, no. 3 (Spring 2011): 259–79.

Ronan, Jana. "The Reference Interview Online." *Reference & User Services Quarterly* 43, no. 1 (2003): 43–47.

Ross, Catherine Sheldrick. "The Reference Interview: Why It Needs to be Used in Every (Well, Almost Every) Reference Transaction." *Reference & User Services Quarterly* 43, no. 1 (2003): 38–48.

Ross, Catherine Sheldrick, Kirsti Nilsen, and Marie L. Radford. *Conducting the Reference Interview*. 2nd ed. New York: Neal-Schuman, 2009.



6

THE CONVENIENCE FACTOR—EASY  
IS AS EASY DOES



In today's fast-paced world, people want information quickly and conveniently. In almost all situations, they decide what services to pursue and what resources to use based on ease of access, ease of use and speed of results. It doesn't matter if the person is young or old, the deadline near or far, the task scholarly or personal—simplicity and rapidity reign.

This emphasis on convenience has implications for libraries. If library collections and services are viewed as arduous and slow, more and more people will seek other information resources. This reduces library visits—both physical and virtual—and potentially undermines library support in the battle for public funding and user attention.

In order to better understand people's motivations, we analyzed data from two multiyear IMLS-funded projects, investigating convenience—whether relating to ease of use, time savings or physical proximity to resources—as a constant theme in different information-seeking behaviors. What we learned has resulted in recommendations that will help to guide libraries as they change their systems and services to appeal to the demands of today's information seekers (Connaway, Dickey, and Radford 2011).

## THE STUDIES

The first study we analyzed, “Sense-Making the Information Confluence” (Dervin, Connaway, and Prabha 2003), was a three-year project that looked at the information-seeking behaviors of faculty, undergraduates and graduate students from 44 colleges and universities in the Midwest United States. For this study, 307 people responded to an online survey and telephone interview follow-up, 78 participated in focus group interviews, and a subset of 15 focus group participants were randomly selected for individual structured interviews. The research revealed each group's information-seeking activities and practices, as well as the choices and criteria for them.

The second project, “Seeking Synchronicity: Evaluating Virtual Reference Services from User, Non-user, and Librarian Perspectives” (Radford and Connaway 2005–2008), studied the factors that influence the selection and use of Virtual Reference Services (VRS) along with the needs, behaviors and impressions of users and non-users of VRS. For this study, 62 users and non-users participated in six focus group interviews, 321 users and non-users responded to online surveys, and 184 completed telephone interviews. The online survey data compared VRS services to other reference formats, along with positive and negative feelings about the VRS experience. The telephone interviews built on the survey responses to further probe VRS-related topics.

Convenience, including issues of ease of access/use and time, permeates the findings throughout both research projects, and is a key consideration in how individuals make choices in their information seeking. Issues of convenience distinguish their respective use of electronic and physical library resources.

## WHAT'S HOT

- **Ease of the Web.** Users believe the Web is fast and easy, providing immediate access to information and giving them what they want.
- **Online full-text journal articles.** Users are not lazy when they rely on full-text articles. They want easy access to information now.
- **24x7 availability.** Users want convenient access to information.
- **Search engines.** Users value simplicity.

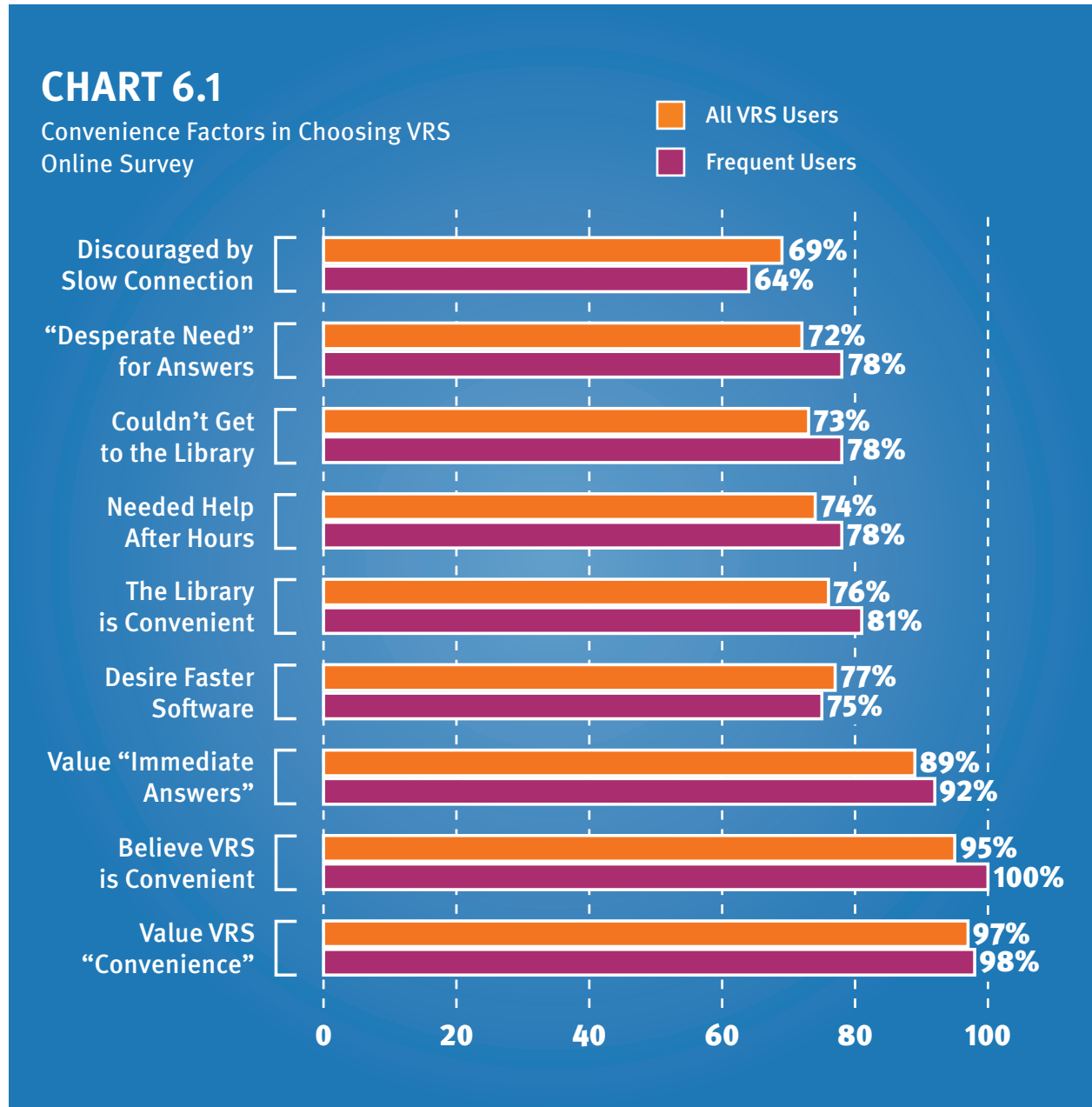
## WHAT'S NOT

- **Difficulty of library systems.** Researchers (students and faculty) find libraries frustrating and try to avoid them.
- **Print articles.** People think it is less convenient to physically access print articles.
- **Limited hours, distance to the library.** Some individuals believe the library presents barriers to their access to information.

## FINDINGS

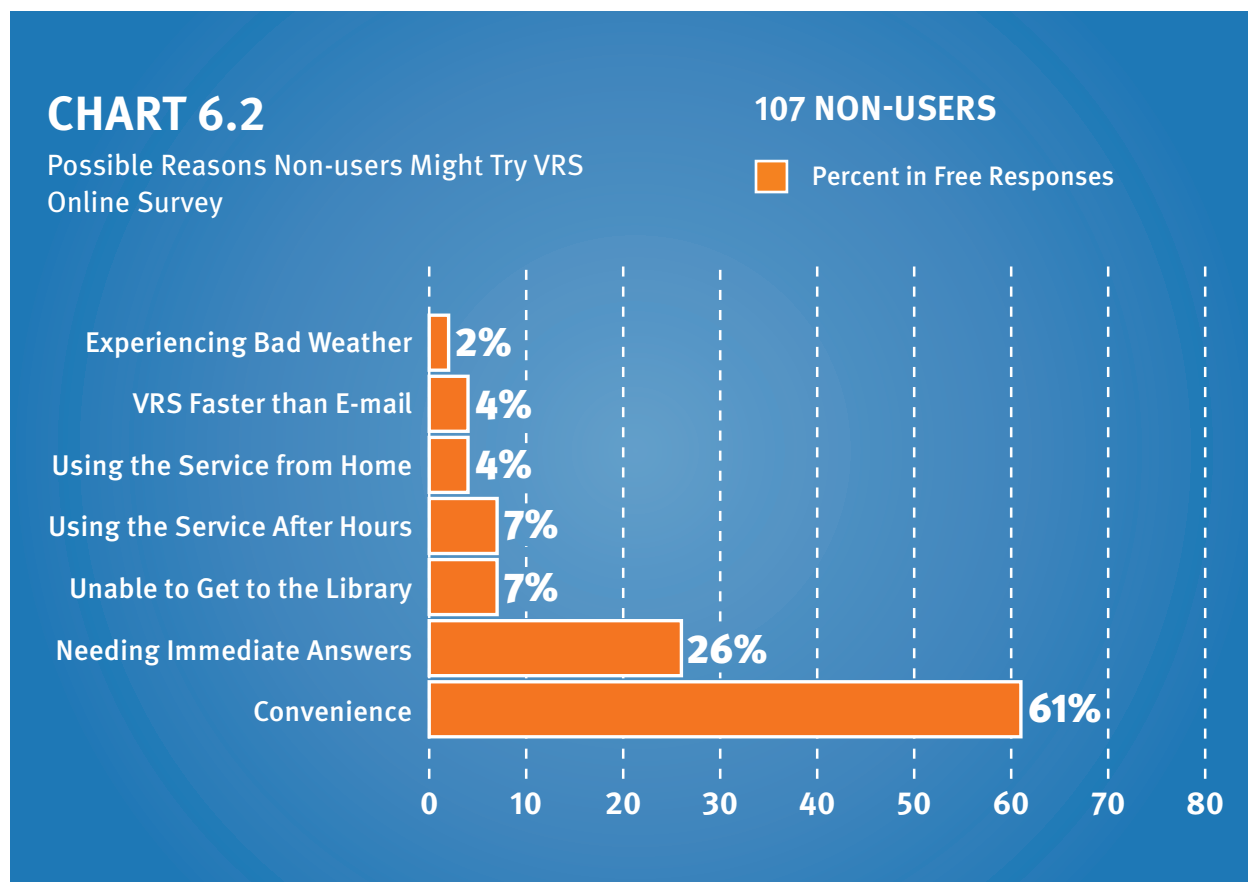
An overwhelming amount of data identifies convenience as absolutely central to information-seeking behaviors. The importance of convenience is especially prevalent among the younger (“Millennial”) generations in both studies, but emerged as an essential consideration across all demographic categories—age, gender, academic role, situation, user or non-user of VRS.

Convenience was a leading feature, for instance, every time VRS users were asked to evaluate reasons for choosing the service, or for recommending it to others. When asked to rate different factors that affect their decision to use VRS, 95% of users (100% of frequent users) cited convenience directly; need for information late at night or on the weekend, times when they could not get to a library, or when there was a “desperate need for quick answers.” “Immediate answers” and “convenience” were among the most highly rated specific features valued in VRS.



When asked to imagine an ideal information system, ideas from undergraduate students include the ability to use keyword searching in all books, a universal library catalog for all libraries, reference staff who conveniently rove about the library, and federated search in databases.

When asked what might convince non-VRS users to try asking a librarian for help using a chat reference service, the single greatest factor was the perceived convenience of the service.



Convenience is a factor for making choices in all situations, both academic information-seeking and everyday life information-seeking, though it plays different roles in different situations. The data are consistent across both studies. Despite a majority of VRS users indicating in telephone interviews that subject expertise was very important to them, only 42% would be willing to wait for that expertise, and very few of them could identify a specific amount of time to wait.

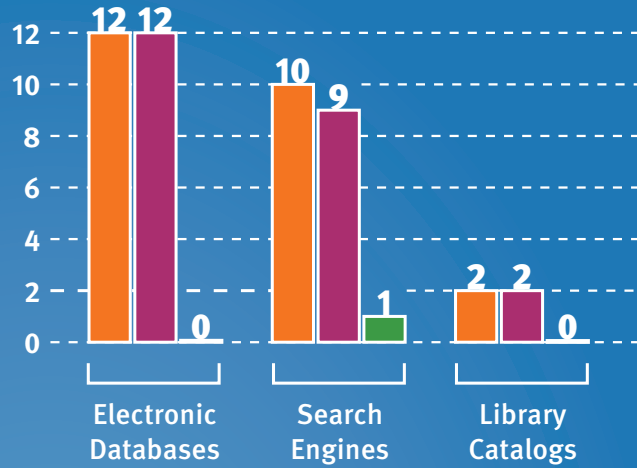
Ease of access to resources is one measure of convenience when making choices in information seeking. The most convenient sources of information were Internet search engines, electronic databases, virtual reference, or online e-reserves, e-books and online booksellers; Google is especially important to the younger generations. Faculty were moderately more positive in their assessment of databases' convenience than graduate and undergraduate students, who both favored search engines.

In addition to e-resources, which afford the convenience of desktop or home access, data confirmed the ease of using friends and family as information sources, as well as the convenience of having a personal library. Faculty most often cited their personal home or office library—an incredibly opportune source—as the most often-used place to find quick information, though many of them also spoke about seeking help from colleagues or searching Google.

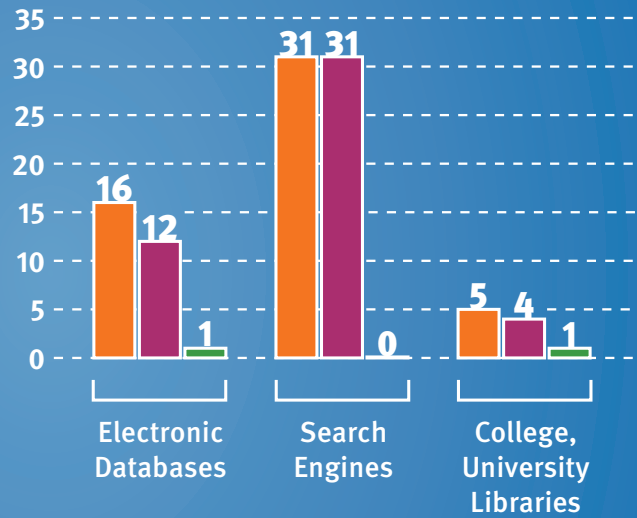
### CHART 6.3

Most Convenient Resources by Population  
Online Survey

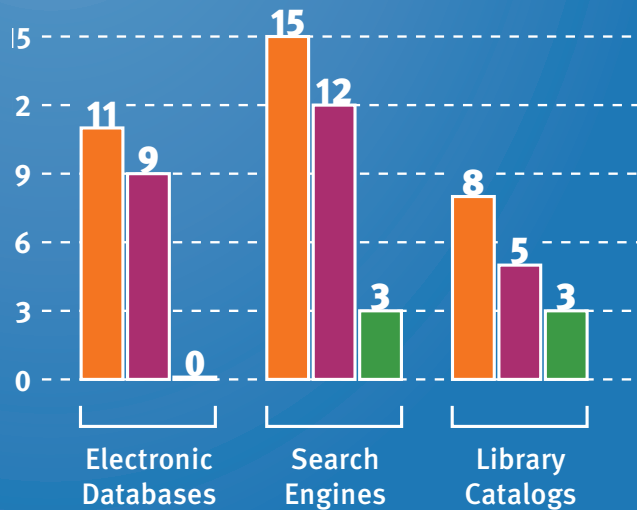
36 FACULTY



76 GRADUATE STUDENTS



59 UNDERGRADUATE STUDENTS



- Providing Information
- Demonstrating Knowledge
- Providing Instruction

Convenience also influences the choice to use or not to use the brick-and-mortar library, though positively speaking it can provide access to library resources after hours or on the weekend.

Inconvenience as expressed in difficulty of access was a repeated complaint against library OPACs in both projects. Undergraduate students participating in the Sense-Making project offered specific criticisms of the library catalog as difficult to use, though they claimed they will use online reserves from the library—after the library closes, a clear convenience choice. They and graduate students both frequently commented on how easy the Web is to use, especially in comparison to library systems.

## RECOMMENDATIONS

Libraries can and must become more convenient in the eyes of today's users by improving services and systems. In order to achieve this goal librarians should:

- **Deliver resources 24/7**—efficiently and quickly—at the point of need at the network level.
- **Integrate library tools into the sites that people use most**—this integration alone may be the best method for increasing convenience and, therefore, use.
- **Provide links and reminders** about appropriate services, intelligently cross-connecting VRS with other library offerings.
- **Make catalog and database interfaces more like Web browsers.**
- **Accommodate different and personalized discovery and access preferences**, including mobile capability.
- **Offer multiple modes of service**—virtual, face-to-face and telephone.
- **Provide opportunities for collaboration** online and in physical library spaces.

Libraries are no longer the only game in town and currently not the first to be chosen. With work, we can make our resources, services and spaces inviting to the current, as well as the next, generation of college and university students, entrepreneurs, inventors, scholars, teachers and researchers.

## WHAT RESEARCH PARTICIPANTS TOLD US

### Millennials



*The convenience is still better online than in person, you don't have to make trips to the library."*

*"It would be convenient, because if I was sitting at a computer and I could ask a question and they would answer immediately...that would be good. Convenience is why I do something as opposed to something else."*

### Undergraduate students



*I don't go into the [library] system unless I have to because there's like 15 logins, you have to get into the research databases. Then it takes you out of that to [the local consortium]..."*

*"I use [the local union catalog], but I don't really need to come into a library, as long as I have a computer at home."*

*"I've always thought that the library was a good source if you have a few months to spend on a paper."*

*"Where they have people who walk around and are they're available to help you not always just confined behind a desk where you have to go up and they're like, well if you take a left after that bookcase then a right."*

### Graduate students



*But other times, it says you have to actually go get the article, and I do a lot of research under a lot of supervisors and stuff. So it's such a drag."*

*"Google, I don't have to know, I go to one spot."*

*"Even with the library, it's start with the imminent. I use the online resources. If I can avoid a physical trip to the library...I'll avoid it."*



*“Mostly I use the Internet because it’s convenient. Since I work at the computer all the time, it’s right there so, you know, when I have a few extra minutes I’ll just type in a search and find information and print it out if I need to.”*

*“I would do everything if not electronically, then somehow vacuum it to someone so they get it immediately.”*

## Faculty



*If I just have a quick thing, and I just want an answer, I will call a colleague that has some expertise....Instead of looking up all the different papers of all the different methods...call them up. It’s much faster.”*

*“A constant perusing of what’s available and if something is new that gets a hit, it’s automatically directed to us whether we ask for it or not.”*

*“Something that I really liked about our Web site, was the ask a librarian icon.”*

## REFERENCES

Connaway, Lynn Silipigni, Timothy J. Dickey, and Marie L. Radford. 2011. “If it is too inconvenient I’m not going after it:” Convenience as a critical factor in information-seeking behaviors. *Library and Information Science Research* 33, no. 3: 179-90.

Dervin, Brenda, Lynn Silipigni Connaway, and Chandra Prabha. 2003. *Sense-making the information confluence: The whys and hows of college and university user satisficing of information needs*. Funded by the Institute of Museum and Library Services (IMLS). <http://imlsosuoclcproject.jcomm.ohio-state.edu>.

Radford, Marie L., and Lynn Silipigni Connaway. 2005–2008. *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives*. Funded by the Institute of Museum and Library Services (IMLS). <http://www.oclc.org/research/activities/synchronicity/>.

## ADDITIONAL READINGS

Connaway, Lynn Silipigni. “Mountains, Valleys, and Pathways: Serials Users’ Needs and Steps to Meet Them. Part I: Identifying Serials Users’ Needs: Preliminary Analysis of Focus Group and Semi-Structured Interviews at Colleges and Universities.” *Serials Librarian* 52, no. 1–2 (2007): 223–36. <http://www.oclc.org/research/publications/archive/2007/connaway-serialslibrarian.pdf>.

Connaway, Lynn Silipigni, Chandra Prabha, and Timothy J. Dickey. *Sense-Making the Information Confluence: The Whys and Hows of College and University User Satisficing of Information Needs. Phase III: Focus Group Interview Study*. Funded by the Institute of Museum and Library Services (IMLS). Columbus, OH: School of Communication, The Ohio State University, 2006. [http://imlsproject.comm.ohio-state.edu/imls\\_reports/imls\\_PH\\_III\\_report\\_list.html](http://imlsproject.comm.ohio-state.edu/imls_reports/imls_PH_III_report_list.html).

Connaway, Lynn Silipigni, and Marie L. Radford. "Virtual Reference Service Quality: Critical Components for Adults and the Net-Generation." *Libri* 60, no. 2 (2010): 165–80.

Connaway, Lynn Silipigni, Marie L. Radford, and Timothy J. Dickey. "On the Trail of the Elusive Nonuser: What Research in Virtual Reference Environments Reveals." *ASIS&T Bulletin* 34, no. 2 (2008): 25–28. [http://www.asis.org/Bulletin/Dec-07/Bulletin\\_DecJan08.pdf](http://www.asis.org/Bulletin/Dec-07/Bulletin_DecJan08.pdf).

Connaway, Lynn Silipigni, Marie L. Radford, Timothy J. Dickey, Jocelyn DeAngelis Williams, and Patrick Confer. "Sense-Making and Synchronicity: Information-Seeking Behaviors of Millennials and Baby Boomers." *Libri* 58, no. 2 (2008): 123–35. <http://www.oclc.org/research/publications/archive/2008/connaway-libri.pdf>.

Prabha, Chandra, Lynn Silipigni Connaway, and Timothy J. Dickey. *Sense-Making the Information Confluence: The Whys and Hows of College and University User Satisficing of Information Needs. Phase IV: Semi-Structured Interview Study*. Funded by the Institute of Museum and Library Services. Columbus, OH: School of Communication, The Ohio State University, 2006. [http://imlsproject.comm.ohio-state.edu/imls\\_reports/imls\\_PH\\_IV\\_report\\_list.html](http://imlsproject.comm.ohio-state.edu/imls_reports/imls_PH_IV_report_list.html).

Radford, Marie L., and Lynn Silipigni Connaway. *Seeking Synchronicity: Evaluating Virtual Reference Services from User, Non-User, and Librarian Perspectives: IMLS Final Performance Report*. Dublin, OH: OCLC Online Computer Library Center, 2008. <http://www.oclc.org/research/activities/synchronicity/reports/20080626-final.pdf>.

**CONCLUSION:  
MOVING VR FORWARD**



So... where do we go from here? That's a very broad question, but one that at least points us in a proactive stance for the future. As we consider how virtual reference (VR) must grow and change to stay current in today's information ecosphere, it may be helpful to review what we've learned from all this research.<sup>1</sup>

- **Users don't know about virtual reference services (VRS).** That's the biggest reason they don't use our services. They don't know what chat reference is, nor that there are any electronic means of communicating with librarians in online synchronous systems.
- **When they do use the services, people want convenience.** They cite it as the most important factor influencing their decision to use a service. They value VR when they can't go to the library, and they value the anytime/anywhere availability.
- **Query clarification** was found to enhance accuracy and satisfaction. Specifically, librarians should check to make sure that they understand the question, and that the requested, specific information is on a website before pushing the information to users.
- **Positive VRS experiences** depend on users getting accurate answers, and getting them quickly from a personable, friendly librarian.
- **From users' perspective, negative VRS experiences** are often caused by not receiving an answer or source; librarians tend to focus on negative user behavior.
- Analysis indicates that **content (information) and relationships (interpersonal aspects)** determine perceptions of satisfaction.
- Users don't mind (and some even like) **scripted messages** (but it's important that they not be overused, which may seem robotic and cold).
- When given the choice, users had **a clear preference** for face-to-face (FtF) reference, but VR was seen as the least intimidating, and the convenient choice for use from home or office.
- **VRS instruction can be very effective** if the user is open to it. This involves asking users if they want to find out how to use resources rather than just forcing instruction, which makes them impatient. With these findings in mind, there are a few directions that seem to make good sense to us in terms of improving the future of VR, for your organization, and for you, personally.

## WHAT CAN YOUR LIBRARY DO?

**Market and promote VR, especially in live settings.** If users don't know about these services, they won't use them. In general, they aren't going to find or understand them if they're introduced to

1. Unless otherwise noted, the data quoted are from Radford, Marie L., and Lynn Silipigni Connaway. 2005–2008. *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives*. Funded by the Institute of Museum and Library Services (IMLS). <http://www.oclc.org/research/activities/synchronicity/>.

## SEEKING SYNCHRONICITY: REVELATIONS AND RECOMMENDATIONS FOR VIRTUAL REFERENCE

them initially online or left to their own resources. That is, users may not know what they're looking at (or for) when or if they encounter VRS on your website. Even if they do discover the service, they're less likely to trust or enjoy the experience if they don't have an established relationship with a librarian from an FtF encounter, or if a trusted librarian or teacher recommends the service.

**Recommendation:** With every live reference transaction as well as in library, use instruction or library programs that offer information and/or training on your VRS. Demo the system, don't just tell them it is "easy to use."

**Go mobile.** The use of mobile and smartphones as computing devices is growing exponentially, especially among populations who are less likely to have access to traditional computing infrastructures—that is the poor, minorities and the young. These are, not coincidentally, populations whose need for reference services is greater than others.

**Recommendation:** Make sure that you provide and market several methods of VRS that are easily available on mobile devices.

**Cooperate more.** Libraries have always been about sharing. This is never truer than when economic times are hard. As the world's financial situation has declined during the past few years, the use of public libraries has gone up. One possible way to lower costs while maintaining service levels is to work as part of a VR cooperative, sharing VR duties across geographic regions, time zones and areas of expertise.

**Recommendation:** If you haven't already, look into what it would take to become part of a VR cooperative.

**Be where the questions are being asked.** Make sure that your VRS are, as much as possible, embedded in the places where your users do their work.

**Recommendation:** Distribute your VR chat widget as widely as possible on your website, schools' websites, your OPAC, discovery interface—even your blogs and Facebook pages.

## WHAT CAN YOU DO?

**Multi-ask.** Whenever you provide reference service, make sure to tell users about other available ways of getting in touch with you, or with other members of the staff.

**Recommendation:** Print a business card-size handout with a quick listing of the ways people can get VR from your library—chat and/or text contacts, website, phone number, e-mail. Distribute at every reference interaction. Create an electronic business card that can be accessed via a Quick Response (QR) code that is imprinted on promotional material and in websites. These are easy to create and are growing in popularity. They quickly can be launched and saved for future reference

by people who have downloaded the app to their smartphones.

**DIY.** “Do It Yourself.” If your library doesn’t have the resources to set up a systemwide VRS, ask about doing it yourself, possibly on a trial basis. Many of the tools of VR can be had for free, even if all you start with is an e-mail account.

**Recommendation:** Start small, collect success stories, learn the technology for yourself—even if your library isn’t interested in VR, it’s an important professional skill set for you to have.

**ABC.** “Always Be Courteous.” If VR is part of your job, it may eventually (or already) seem very pedestrian to you, leading to casual and short responses. Or you may simply be super busy and trying to help as many users as possible. Either way, remember that every VR session may be the first of its kind for the user. Your attitude and communication skills may not only determine if a session is successful, but whether or not the person will return in the future.

**Recommendation:** Remember that users may put as much reliance—sometimes more—on the attitude and personality of reference librarians than they do accuracy and answers.

**More is better.** Whenever possible in a VR setting, provide a variety of resources. The subtle visual and emotional cues that we pick up on in real life settings aren’t available in VR. It’s much harder to tell that you haven’t quite hit the nail on the head when all you’ve got is a screen full of short text messages.

**Recommendation:** People are used to getting dozens (if not hundreds) of results from websites, search engines, etc. Don’t be afraid to “go a little wide” and give your users more than they asked for, especially if you can provide some context for your recommendations. Also, don’t be afraid to refer complex questions to another librarian or more authoritative source. People don’t mind being told that you’re bringing in “the big guns.” It’s often better to have someone wait than provide a mediocre response. Ask users if they are in a hurry or if they would prefer to wait for a more complete answer; you may be surprised to find that many are using VR for convenience rather than speed.

## FINAL THOUGHTS

We’ve used the term “clarifying the question” throughout this report. Using those tried and true reference interviewing skills that you already know is one way to ensure a successful VR encounter. It is also crucial to “show your smile” and to be welcoming and friendly in every interaction. When librarians are busy with multiple users and conflicting demands on their time, they can forget that how users are treated is as important as the information they are given. Our research indicates that whatever the mode of interaction, users need reassurance and a positive experience. They are quick to virally market our services if they have had a successful encounter—and just as quick (or

even quicker) to virally spread negative reports if they have not. We saw generational differences in our research, to be sure. And it's important to take that into consideration when providing VR. But more than that, every community, user and question is different. Tailor your services to different populations, and tailor every response to each specific person. And the way to best do that is by asking more questions and paying close attention to the answers.

It's what differentiates us—librarians—from nameless, faceless white search boxes. It's the ability to engage in dialogue, not just fire off rote responses. You may feel as if your job is to provide answers. That's only part of it. Your job is to understand your users' needs. And the more questions you ask, the better you'll be able to do that. You'll establish rapport, gain insights into larger requirements and establish context. The process of asking questions also positions you more favorably in terms of courtesy and comfort; many people are hesitant when they sign on to our services. A friendly attitude and well-worded questions that are not threatening frequently help those who are ill-at-ease feel better about the experience. We found, for example, that it is better to ask, "Have you had a chance to get started yet?" or other neutral questions, rather than the pointed: "Have you checked the online catalog (or other source)?" which frequently causes users to abruptly log off, rather than admit that they haven't.

VR can be an increasingly important source of information for your users, and of respect and credit for your library. As we move further out into an information landscape and encounter ever more resources, the need for someone who can help us make sense of the environment grows. You are the guide your users need to successfully explore this strange and wonderful wilderness. Whether through a phone call, e-mail, chat window or text box, your voice can be the one they associate with a successful information journey.

## REFERENCES

Radford, Marie L., and Lynn Silipigni Connaway. 2005–2008. *Seeking synchronicity: Evaluating virtual reference services from user, non-user, and librarian perspectives*. Funded by the Institute of Museum and Library Services (IMLS). <http://www.oclc.org/research/activities/synchronicity/default.htm>.

## Bibliography

Connaway, Lynn Silipigni. “The Library is a good source if you have several months.’ Making the Library More Accessible.” Presented at the Oklahoma Chapter, Association of College and Research Libraries (ACRL), Tulsa, Oklahoma, November 5, 2007. <http://www.oclc.org/research/projects/synchronicity/ppt/acrlchapter2007-11-05.ppt>.

———. “Make Room for the Millennials.” *NextSpace* 10 (2008): 18–19. <http://www.oclc.org/nextspace/010/research.htm>.

———. “Mountains, Valleys, and Pathways: Serials Users’ Needs and Steps to Meet Them. Part I: Preliminary Analysis of Focus Group and Semi-Structured Interviews at Colleges and Universities.” *Serials Librarian* 52, no. 1–2 (2007): 223–36. <http://www.oclc.org/research/publications/archive/2007/connaway-serialslibrarian.pdf>.

Connaway, Lynn Silipigni, and Timothy J. Dickey. *Towards a Profile of the Researcher of Today: The Digital Information Seeker: Report of Findings from Selected OCLC, RIN, and JISC User Behavior Projects*. 2010. <http://www.jisc.ac.uk/media/documents/publications/reports/2010/digitalinformationseekerreport.pdf>.

Connaway, Lynn Silipigni, Timothy J. Dickey, and Marie L. Radford. “If it is too inconvenient I’m not going after it:’ Convenience as a Critical Factor in Information-Seeking Behaviors.” *Library and Information Science Research* 33, no. 3 (2011): 179-90.

Connaway, Lynn Silipigni, Chandra Prabha, and Timothy J. Dickey. *Sense-Making the Information Confluence: The Whys and Hows of College and University User Satisficing of Information Needs. Phase III: Focus Group Interview Study*. Funded by the Institute of Museum and Library Services (IMLS). Columbus, OH: School of Communication, The Ohio State University, 2006. [http://imlsproject.comm.ohio-state.edu/imls\\_reports/imls\\_PH\\_III\\_report\\_list.html](http://imlsproject.comm.ohio-state.edu/imls_reports/imls_PH_III_report_list.html).

Connaway, Lynn Silipigni, and Marie L. Radford. “Convenience, Connections, Correctness, and Choice: Critical Components of Virtual Reference Service Quality.” Paper presented at the *i3 information: interactions and impact Conference*, Aberdeen, Scotland, June 22–25, 2009. <http://www.oclc.org/research/projects/synchronicity/ppt/20090624-i3.ppt>.

———. “Service Sea Change: Clicking with Screenagers Through Virtual Reference.” In *Sailing Into the Future: Charting Our Destiny: Proceedings of the Thirteenth National Conference of the Association of College and Research Libraries*, March 29–April 1, 2007, Baltimore, Maryland, edited by Hugh A. Thompson. Chicago: Association of College and Research Libraries, 2007. <http://www.oclc.org/research/publications/archive/2007/connaway-acrl.pdf>.



———. “The Thrill of the Chase in Cyberspace: A Report of Focus Groups with Live Chat Librarians.” *Informed Librarian Online* (2007). <http://www.informedlibrarian.com/guestForum.cfm?FILE=gf0701.html>.

———. “Virtual Reference Service Quality: Critical Components for Adults and the Net-Generation.” *Libri* 60, no. 2 (June 2010): 165–80.

———. “‘Way sweet’ or ‘just wrong’: Users and Librarians Reveal Critical Factors for Virtual Reference Service Excellence.” Presented at the ALA 2009 Annual Conference, Chicago, Illinois, July 11, 2009. <http://www.oclc.org/research/projects/synchronicity/ppt/20090709-ala.ppt>.

Connaway, Lynn Silipigni, Marie L. Radford, and Timothy J. Dickey. “On the Trail of the Elusive Non-User: What Research in Virtual Reference Environments Reveals.” *ASIS&T Bulletin* 34, no. 2 (2008): 25–28. <http://www.asis.org/Bulletin/Dec-07/>.

Connaway, Lynn Silipigni, Marie L. Radford, Timothy J. Dickey, Jocelyn DeAngelis Williams, and Patrick Confer. “Sense-Making and Synchronicity: Information-Seeking Behaviors of Millennials and Baby Boomers.” *Libri* 58, no. 2 (2008): 123–35. <http://www.oclc.org/research/publications/archive/2008/connaway-libri.pdf>.

Connaway, Lynn Silipigni, Marie L. Radford, and Jocelyn DeAngelis Williams. “Engaging Net Gen Students in Virtual Reference: Reinventing Services to Meet Their Information Behaviors and Communication Preferences.” In *Pushing the Edge: Explore, Extend, Engage: Proceedings of the Fourteenth National Conference of the Association of College and Research Libraries, March 12–15, 2009, Seattle, Washington*, edited by Dawn M. Mueller, 10–27. Chicago: Association of College and Research Libraries, 2009. <http://www.oclc.org/research/publications/archive/2009/connaway-acrl-2009.pdf>.

Curry, Evelyn L. “The Reference Interview Revisited: Librarian-patron Interaction in the Virtual Environment.” *Simile* 5, no. 1 (February 2005). <http://utpjournals.metapress.com/content/d7k28457m327v81l/fulltext.pdf>.

Dempsey, Beth. “What Boomers Want.” *Library Journal* 132, no. 12 (2007): 36–39.

De Rosa, Cathy, and Jenny Johnson. *From Awareness to Funding: A study of library support in America: A Report to the OCLC Membership*. Dublin, OH: OCLC Online Computer Library Center, Inc., 2008.

Dervin, Brenda, Lynn Silipigni Connaway, and Chandra Prabha. *Sense-Making the Information Confluence: The Whys and Hows of College and University User Satisficing of Information Needs*. Funded by the Institute of Museum and Library Services (IMLS), 2003. <http://imlsosuoclcproject.jcomm.ohio-state.edu>.

Dewdney, Patricia, and Catherine Sheldrick Ross. "Flying a Light Aircraft: Reference Service Evaluation from a User's Viewpoint." *RQ* 34, no. 2 (1994): 217–30. <http://www.unc.edu/~bwilder/inls500/dewdney11.pdf>.

Doherty, John J. "Reference Interview or Reference Dialogue?" *Internet Reference Services Quarterly* 11, no. 3 (2006): 95–107.

Flanagan, John C. "The Critical Incident Technique." *Psychological Bulletin* 51, no. 4 (July 1954): 327–58.

Gers, Ralph, and Lillie J. Seward. "Improving Reference Performance: Results of a Statewide Study." *Library Journal* 110, no. 18 (1985): 32–35.

Gross, Melissa. "The Imposed Query." *RQ* 35, no. 2 (1995): 236–43.

———. "The Imposed Query." In *Theories of Information Behavior*, edited by Karen E. Fisher, Sandra Erdelez, and Lynne (E. F.) MacKechnie, 164–68. Medford, NJ: Information Today, 2005.

———. "Imposed Versus Self-generated Questions: Implications for Reference Practice." *Reference & User Services Quarterly* 39, no. 1 (1999): 53–61.

———. "Pilot Study on the Prevalence of Imposed Queries in a School Library Media Center." *School Library Media Quarterly* 25 (1997): 157–66.

Grossman, Terry. *The Baby Boomers' Guide to Living Forever*. Golden, CO: Hubristic Press, 2000.

Janes, Joseph, and Joanne Silverstein. "Question Negotiation and the Technological Environment." *D-Lib Magazine* 9, no. 2 (2003). <http://www.dlib.org/dlib/february03/janes/02janes.html>.

Mabry, Celia Hales. "The Reference Interview as Partnership: An Examination of Librarian, Library User, and Social Interaction." *The Reference Librarian* 83–84 (2003): 41–56.

Marsteller, Matthew R., and Dorianne Mizzy. "Exploring the Synchronous Digital Reference Interaction for Query Types, Question Negotiation, and Patron Response." *Internet Reference Services Quarterly* 8, no. 1–2 (2003): 149–65.

Ozkaramanli, Eylem. "Librarians' Perceptions of Quality Digital Reference Services by Means of Critical Incidents." PhD diss., University of Pittsburgh, 2005.

Prabha, Chandra, Lynn Silipigni Connaway, and Timothy J. Dickey. *Sense-Making the Information Confluence: The Whys and Hows of College and University User Satisficing of Information Needs. Phase IV: Semi-Structured Interview Study*. Funded by the Institute of Museum and Library Services. Columbus, OH: School of Communication, The Ohio State University, 2006. [http://imlsproject.comm.ohio-state.edu/imls\\_reports/imls\\_PH\\_IV\\_report\\_list.html](http://imlsproject.comm.ohio-state.edu/imls_reports/imls_PH_IV_report_list.html).

Prabha, Chandra, Lynn Silipigni Connaway, Lawrence Olszewski, and Lillie Jenkins. "What is Enough? Satisficing Information Needs." *Journal of Documentation* 63, no. 1 (2007): 74–89. <http://www.oclc.org/research/publications/archive/2007/prabha-satisficing.pdf>.

Radford, Marie L. "The Critical Incident Technique and the Qualitative Evaluation of the Connecting Libraries and Schools Project." *Library Trends* 54, no. 1 (Summer 2006): 46–64.

———. "Encountering Virtual Users: A Qualitative Investigation of Interpersonal Communication in Chat Reference." *Journal of the American Society for Information Science and Technology* 57, no. 8 (2006): 1046–59.

———. "Interpersonal Communication in Chat Reference: Encounters with Rude and Impatient Users." In *The Virtual Reference Desk: Creating a Reference Future*, edited by R. David Lankes, Eileen Abels, Marilyn White, and Saira N. Haque, 41–73. New York: Neal-Schuman Publishers, 2006.

Radford, Marie L., and Lynn Silipigni Connaway. Appendix O to *Seeking Synchronicity: Evaluating Virtual Reference Services from User, Non-User, and Librarian Perspectives*. Funded by the Institute of Museum and Library Services (IMLS), 2005–2008. <http://www.oclc.org/research/activities/synchronicity/reports/20080626-final-appendices.pdf>.

———. Appendix R to *Seeking Synchronicity: Evaluating Virtual Reference Services from User, Non-User, and Librarian Perspectives*. Funded by the Institute of Museum and Library Services (IMLS), 2005–2008. <http://www.oclc.org/research/activities/synchronicity/reports/20080626-final-appendices.pdf>.

———. "Connecting in Cyberspace: The Millennial Generation and Virtual Reference Service." Presented to the panel, *Behaviors and Preferences of Digital Natives: Informing a Research Agenda at the American Society for Information Science and Technology 2007 Annual Meeting*, Milwaukee, Wisconsin, October 18–25, 2007. <http://www.oclc.org/research/projects/synchronicity/ppt/asist07.ppt>.

———. "Cordial Connections: Evaluating Virtual Reference from User, Non-user, and Librarian Perspectives Using the Critical Incident Technique." In *Proceedings for the LIDA 2008 (Libraries in the Digital Age) Conference, Dubrovnik and Mljet, Croatia, June 2–7, 2008*, edited by Josipa Selthofer, Tatjana Aparac-Jelusic, and Maja Krtalic, 56–67. <http://www.oclc.org/research/projects/synchronicity/resources/lida2008-radfordconnaway.pdf>.

———. "Getting Better All the Time: Improving Communication and Accuracy in Virtual Reference." In *Reference Renaissance: Current & Future Trends*, edited by Marie L. Radford and R. David Lankes, 39–54. New York: Neal-Schuman, 2010.

———. “‘I Stay Away from the Unknown, I Guess.’ Measuring Impact and Understanding Critical Factors for Millennial Generation and Adult Non-users of Virtual Reference Services.” In *Online Proceedings of the Fifth Annual iConference, University of Illinois at Urbana–Champaign, February 3–6, 2010*. [http://nora.lis.uiuc.edu/images/iConferences/2010papers2\\_Page-Zhang.pdf](http://nora.lis.uiuc.edu/images/iConferences/2010papers2_Page-Zhang.pdf).

———. “Screenagers’ and Live Chat Reference: Living Up to the Promise.” *Scan* 26, no. 1 (2007): 31–39. <http://www.oclc.org/research/publications/archive/2007/connaway-scan.pdf>.

———. *Seeking Synchronicity: Evaluating Virtual Reference Services from User, Non-User, and Librarian Perspectives*. Funded by the Institute of Museum and Library Services (IMLS), 2005–2008. <http://www.oclc.org/research/activities/synchronicity/>.

———. *Seeking Synchronicity: Evaluating Virtual Reference Services from User, Non-User, and Librarian Perspectives: IMLS Final Performance Report*. Dublin, OH: OCLC Online Computer Library Center, 2008. <http://www.oclc.org/research/activities/synchronicity/reports/20080626-final.pdf>.

———. “Users and Librarians Engaging in Virtual Spaces: Using Critical Incidents to Inform Practice and Education in Chat Reference.” Presented at the ALISE Conference, Philadelphia, Pennsylvania, January 8–11, 2008. <http://www.oclc.org/research/projects/synchronicity/ppt/alise2008.ppt>.

Radford, Marie L., Lynn Silipigni Connaway, Patrick Confer, Susanna Sabolsci-Boros, and Hannah Kwon. “‘Are We Getting Warmer?’ Query Clarification in Live Chat Virtual Reference.” *Reference & User Services Quarterly* 50, no. 3 (Spring 2011): 259–79.

Ronan, Jana. “The Reference Interview Online.” *Reference & User Services Quarterly* 43, no. 1 (2003): 43–47.

Ross, Catherine Sheldrick. “The Reference Interview: Why It Needs to be Used in Every (Well, Almost Every) Reference Transaction.” *Reference & User Services Quarterly* 43, no. 1 (2003): 38–48.

Ross, Catherine Sheldrick, and Kirsti Nilsen. “Has the Internet Changed Anything in Reference? The Library Study, Phase 2.” *Reference & User Services Quarterly* 40, no. 2 (2000): 147–55.

Ross, Catherine Sheldrick, Kirsti Nilsen, and Marie L. Radford. *Conducting the Reference Interview*. 2nd ed. New York: Neal-Schuman, 2009.

Rushkoff, Douglas. *Playing the Future: How Kids’ Culture Can Teach Us to Thrive in an Age of Chaos*. New York: HarperCollins, 1996.

Walter, Virginia A., and Cindy Mediavilla. “Teens are from Neptune, Librarians are from Pluto: An Analysis of Online Reference Transactions.” *Library Trends* 54, no. 2 (2005): 209–27.

White, David. "Not 'Natives' & 'Immigrants' but 'Visitors' & 'Residents.'" *TALL Blog: Online Education with the University of Oxford*, April 23, 2008. <http://tallblog.conted.ox.ac.uk/index.php/2008/07/23/not-natives-immigrants-but-visitors-residents/>.

For updates and more information about  
*Seeking Synchronicity: Revelations and Recommendations for Virtual Reference*  
please visit: [www.oclc.org/reports/](http://www.oclc.org/reports/)



6565 Kilgour Place  
Dublin, Ohio 43017-3395  
1-800-848-5878 +1-614-764-6000  
Fax: +1-614-764-6096  
[www.oclc.org](http://www.oclc.org)