

Marie L. Radford

Rutgers University
School of Communication and Information
732-932-7500 x8233
mradford@rutgers.edu

Lynn Silipigni Connaway

OCLC, Inc.
OCLC Research, 6565 Kilgour Place
Dublin, OH 43017
(303) 246-3623
connawal@oclc.org

**"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**

Note: This is a pre-print version of a paper forthcoming in the *iConference 2010 Proceedings*. Please cite the published version; a suggested citation appears below. Correspondence about the article may be sent to the authors at mradford@rutgers.edu.

© 2010 OCLC Online Computer Library, Inc.
6565 Kilgour Place, Dublin, Ohio 43017-3395 USA
<http://www.oclc.org/>

Reproduction of substantial portions of this publication must contain the OCLC copyright notice.

Suggested citation:

Radford, Marie L., and Lynn Silipigni Connaway. 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." *iConference 2010 Proceedings*. Pre-print available online at:
<http://www.oclc.org/research/activities/synchronicity/reports/iconference2010paper.htm>.

1. INTRODUCTION

Although research on Virtual Reference Service (VRS) users has proliferated since its beginnings in 1999, a negligible amount is known about non-users and the reasons why they do not select VRS for their information needs. The international study "Seeking Synchronicity: Evaluating Virtual Reference Services from User, Non-User, & Librarian Perspectives"ⁱ investigated critical factors in selection, use, and satisfaction of synchronous, live chat services. The project involved several data collection techniques (transcript analysis, focus group interviews, online surveys, individual interviews) using quantitative and qualitative methodologies. The project's four phases involved: focus group interviews; online surveys; telephone interviews with VRS users, non-users, and librarians; and analysis of 850 QuestionPointⁱⁱ live chat transcripts. This paper reports results from online surveys and telephone interviews for non-users.

Theoretical frameworks from [1] and [2] as applied to face-to-face (FtF) [3,4] and chat [5,6] reference encounters were used to develop research questions and to guide survey instrument development and data analysis. These research questions also developed from the project's focus group and transcript analysis results and from the literature review:

- What are VRS non-users' communication and information-seeking preferences?
- What factors would influence non-users decisions to use VRS?
- What are critical factors in successful reference encounters?
- What is the relative importance of getting an information/answer vs. how one is treated in determining success?

2. DATA COLLECTION AND ANALYSIS

Online survey and telephone interview questions emerged from the analysis of the focus group interviews and the chat transcripts. Non-users (those who had never used VRS, but may be using Instant Messaging (IM) or chat for social or business purposes and may also be users of physical or digital libraries), were recruited for both the online survey and telephone interviews through a variety of methods including university email listservs and posting of flyers.

VRS non-users completed 184 online surveys and 107 telephone interviews featuring quantitative and qualitative questions. Data was collected from 6/2007 to 3/2008. The team used descriptive statistics for quantitative data and grounded theme analyses [7] and the Critical Incident Technique (CIT) [8] for qualitative data.

3. DEMOGRAPHICS FOR ONLINE SURVEYS AND TELEPHONE INTERVIEWS

The majority of online survey and phone interview participants were Caucasian, female, used public libraries, and suburban libraries, but had not tried live chat VRS. Focus group and transcript analysis revealed generational differences, so data for Millennial generationⁱⁱⁱ (12 - 28 years old) respondents (aka Generation X, Net Gen) was compared to older adults (29+)^{iv}. (See Tables 1 and 2).

Table 1: Millennial Demographics Online Surveys & Telephone Interviews (N=195)

	Total	%
Gender		
Female	124	64%
Male	71	36%
Age		
12-14	23	12%
15-18	59	30%
19-28	113	58%
Ethnicity		
African American	16	8%
Asian/Pacific Islander	37	19%
Caucasian	127	65%
Hispanic/Latino	8	4%
Native American	2	1%
N/A	1	1%
Other	4	2%
Types of Library		
Academic	35	18%
Public	90	46%
School	70	36%
Location		
Urban	73	37%
Rural	12	6%
Suburban	110	56%

Table 2: Older Adult Demographics Online Surveys & Telephone Interviews (N=95)

	Total	%
Gender		
Female	72	76%
Male	23	24%
Age		
29-35	20	21%
36-45	26	27%
46-55	27	28%
56-65	15	16%
65+	7	7%
Ethnicity		
African American	6	6%
Asian/Pacific Islander	3	3%
Caucasian	79	83%
Native American	1	1%
Other	4	4%
N/A	2	2%
Type of Library		
Academic	17	18%
Public	76	80%
School	1	1%
Special	1	1%
Location		
Rural	6	6%
Suburban	56	59%
Urban	33	35%

4. QUANTITATIVE RESULTS ONLINE SURVEY

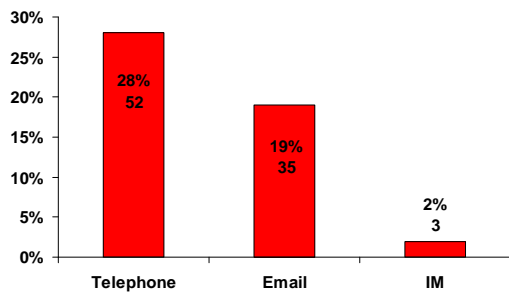
4.1 Online Surveys Demographics

Of 184 online survey respondents, 66% (122) were Millennials and 34% (62) were older adults. As noted above, the majority for both groups were female, Caucasian, and used public libraries and suburban libraries.

4.2 Reference Experience

In addition to FtF interaction, participants reported use of other modes with 28% (52) having used the telephone, 19% (35) email, and 2% (3) IM reference. Phone reference was used by 78% (95) of Millennials versus 60% (27) of adults. (See Figure 1.)

Figure 1: Experience with Reference Modes: Non-User Online Survey (N=184)



When asked about their preferences 81% (N=50) of adults and 71% (N=87) of Millennials were partial to FtF, as illustrated below:

“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...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...this experience gave me a great weekend in addition to some very enjoyable reading material ... In this particular circumstance having a face-to-face enabled us to share a more personable and friendly exchange of information.”^v (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.” (Millennial)

As Figure 2 shows, 49% (60) of Millennials enjoyed FtF above email (27%, 33), phone (12%, 14), or texting (12%,15) for reference as exemplified below:

“I believe the face-to-face format helped my experience to be successful. This is because the interaction was far more personal, I was able to clearly state my question and get immediate feedback or answers. She was able to clarify what it was that I was looking for and was there waiting for me to come back if I had any trouble finding what I needed once she had given me the locations of what I was looking for.” (Millennial)

“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)

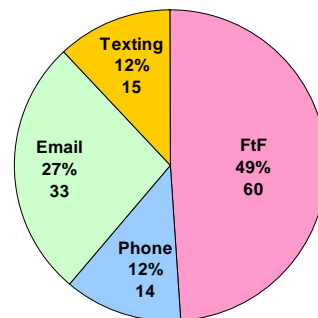


Figure 2: FtF Preferred by Millennials: Non-user Online Survey (N=122)

“I most enjoy using”

4.3 Email Reference Least Intimidating

Millennials most enjoyed FtF reference, but 51% (62) reported being less intimidated by email, followed by FtF (20%, 24), texting (17%, 21), and telephone (12%, 15) (see Figure 3).

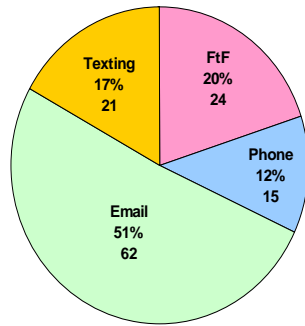


Figure 3: Email Least Intimidating to Millennials: Online Survey (N=122)

“I am least intimidated by”

4.4. Convenience

Responding to the statement: “The library is convenient,” 76 (87%) of the 87 Millennials and 40 (78%) of the 51 adults answered positively. However, some participants commented that online sources are more convenient:

“Going to an actual library would be my last resort. I can get everything that I can get at a library and more online, and I don’t have to go anywhere. I guess that’s what influences it.” (Millennial)

“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)

4.5 Remote Access

Reacting to the statement, “Remote access is important,” 95% (39) of the Millennials and 85% (11) of the adults answered positively. This comment is typical:

“Because I am on the computer a lot anyway and I wouldn’t have to leave my house to physically go to the library to get some answers. It is just as easy for me to formulate my questions online and it would save me time.” (Millennial)

4.6 Personal Relationships

Personal relationships with librarians were considered to be more important for adults 43% (22) (N=51) than Millennials 24% (21) (N=86). Adults 51% (26) were more likely to value interactions with specific librarians than Millennials 24% (24). Illustrative comments follow:

“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 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.” (Adult)

“I was at my town’s public library, and there is this one lady who works in the Reference department...One time, I needed some books and she looked it up for on the computer and said that this library didn’t have the book, but another library did. She wrote down the information for me...This lady is very helpful, she makes you feel like she actually wants to help you and goes onto the computer, looks up the subject you’re working on, and finds the books for you, and if the book(s) isn’t there, she’ll help you request it. Other librarians don’t offer this same help.” (Millennial)

4.7 Friendliness/Politeness

69% (28) of the Millennials (N=41), and 29% (4) of older adults (N=14), valued the FtF librarians’ friendliness and politeness. A sample statement from a Millennial:

“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)

One Millennial shared an experience with an unfriendly librarian, contrasting her behavior with that of another librarian.

“It was awhile ago, but I asked the reference librarian where to find books relating to a certain topic I was studying in school at the time and she just kind of said “over there” and pointed...She did not seem engaged or interested in truly helping me find the books and didn’t really care that I never found them, I was wondering all over looking and she just sat there...I doubt she would have been any more helpful in another format and I don’t care if she would have been great at texting etc. because at the time, I was there looking for books and just wanted to know specifically where they were located. She did not seem interested in helping me, let alone exhaust all of her means for doing so. Ever since then, I usually avoid that person and go to the one who has helped me successfully.” (Millennial)

4.8 Reasons for Not Choosing VRS

Reflecting the Millennial's 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." Adults commented on why they might/might not try VRS:

"I most likely will not use this service. Computers were not taught in High School when I graduated in 1972, I have only had a computer and used email since 2005, I have never used a chat room or service." (Adult)

"If they had classes at the Library and showed me how to do it I might try it. My daughter usually shows me everything I need. But I really like going to the Library and talking with someone in person, so I probably wouldn't use the service even if I knew how to use it." (Adult)

More adults (35% 22) were concerned that their typing was not adequate for VR compared to 16% (19) of Millennials. However, the younger cohort (29%, 35) was more concerned that their questions might annoy the librarian and some worried about "bothering" the librarians. One explained why:

"The librarian I asked seemed too occupied with other matters to pay any attention to my question, and she made me feel stupid and intrusive for even asking her such a thing." (Millennial)

Some did not believe a librarian could help, others did not know VRS existed:

"I do not see myself using chat reference services because in the absence of having a reference librarian help me locate an appropriate or required source, I have friends in the LIS discipline with exemplary reference/research skills who could help me. Additionally, because I am in research, I have cultivated my own knowledge base of where/how to track down information. The only time I could ever imagine using chat reference is if I were incapacitated or unable to physically be in a library or if I were unable to reach one of my LIS colleagues. Otherwise, I see myself as a self-sufficient researcher who relies on her own social network and knowledge to locate reference material." (Adult)

"I've never used this type of service and never knew it was available – that's probably why I never tried it. Also, in my everyday life I don't run across the need to research something in depth (the internet usually has enough information) so I don't really have a need to chat with someone for reference help." (Millennial)

Both cohorts did not use VRS because of satisfaction with other information sources (e.g., family, friends, colleagues, teachers, the Web):

"I choose to go FTF because I'm not lazy, and I can get a more accurate answer FTF not on chat reference. And I can be there to get the books I want, and not waste a librarian's time on the computer." (Millennial)

"Why use VRS when phone, face-to-face, or even e-mail could be more convenient?" (Millennial)

"I don't know how to access computer library service. When I need to look something up I use Google." (Adult)

4.9 Reasons to Use VRS

Non-users thought they would try VRS if they could receive information quickly and around the clock, 24/7/365:

"If it is available 24/7 I'll try it." (Millennial)

5. QUANTITATIVE RESULTS TELEPHONE INTERVIEWS

5.1 Demographics

Millennials gave 69% (73) of 107 telephone interviews, 31% (33) were older adults, and one gave no age. As above, the majority for both groups was female, Caucasian, used public libraries, and libraries in suburban areas. Most Millennials were aged 19 to 28 and adults were 29 to 35.

5.2 FtF Preferred

The telephone had never been used for reference by 76% (81) of participants, 74% (79) had not used email, and 94% (101) had not used IM reference. Twenty-four percent (26) preferred FtF reference and complimented librarians:

"[T]hey kind of know, like, almost 'every single book' in the library, or at least they know how to use the computer to find the book itself. And if I need help on some kind of information, they know stuff about what kind of books I need to use." (Millennials)

"I think reference librarians are up there with fire fighters as my heroes." (Adult)

5.3 Reasons for Not Choosing VRS

When asked why they did not use VRS, 82% (24) of 34 interviewees responded that they were unaware that it existed.

"I think I am unfamiliar with it. I don't have info or familiarity with it. I stray away from the unknown I guess." (Millennial)

When asked what alternatives to the library they chose, 43% (45) of participants said they used the Web. Specifically, 45% (33) of Millennials and 28% (20) of adults used the Web for "personal convenience." Google was mentioned by 15% (11) of Millennials and 3% (2) of adults:

"Say I have physics homework, I wouldn't use the Internet to find information. I would find a person to help me understand it. But if I have a topic to research, I probably wouldn't go to a person, I would go straight to Google or Yahoo and research away." (Millennial)

5.4 Reasons to Use VRS

When asked what might convince them to ask for help from VRS, convenience again was mentioned, including 24/7 access to librarians. Thirty percent (32) of respondents cited immediate answers and 17% (18) appreciated home access.

"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." (Millennial)

6. QUALITATIVE DATA ANALYSIS – CRITICAL INCIDENTS (CIs)

Qualitative data were analyzed with Flanagan's CIT [8], a qualitative method which is used to evaluate programs or services; including reference encounters (name removed). CIT is "often used to study effective and ineffective human behavior" [9] as it allows critical factors to emerge rather than be imposed.

Online survey and telephone interview instruments included two CI questions, which asked participants to "think about one experience" in which he/she felt a positive result and in which a negative result was achieved after seeking reference services. Then they were asked to describe each interaction and to identify factors that made it successful/unsuccessful.

The CIs were sorted into content themes following the constant comparative method [6,10]. Relational theory provides the analytical framework. It posits that every message has dual dimensions – both content (information) and relational (interpersonal) [1]. Emerging themes were expanded and merged into the Critical Incident Coding Scheme developed by [9, 11],

for FtF reference encounters and VR encounters [5]. Content themes relate to interactions that focus on the information sought, the degree to which participants perceived that librarians interacted knowledgeably. The relational themes outline personal aspects, including attitude, relationship quality, and approachability.

7. QUALITATIVE RESULTS ONLINE SURVEYS

7.1 Positive CIs

A total of 154 (84%) positive CIs were collected from 184 online surveys. 108 (70%) of these were described by Millennials. Participants attributed success to information delivery/retrieval (50%, 54), the librarians' positive attitude towards individual and task (36%, 39), location of specific resources (20%, 22), and answering questions (14%, 15). A number of themes are revealed in positive CIs, as shown in below examples:

"I asked the librarian where the murder mystery books were located, she was kind of busy checking in books, but still took the time to answer my question. She put down what she was doing and she walked me to the correct section, instead of just pointing me that way." (Millennial)

"I was looking for books on theoretical physics. My question was, 'What would be the latest and most comprehensive book on quantum electrodynamics?' I felt the encounter was successful because the librarian apparently had a background in physics. He was up to date in his physics knowledge and was aware of the latest books." (Millennial)

7.2 Negative CIs

Negative CIs were provided by 99 (54%) respondents, of which 75% (74) were Millennials. Unsuccessful experiences were attributed to librarians who impeded information delivery/retrieval (64%, 47), had a negative attitude towards task (47%, 35), or were slow in providing answers (11%, 8). Missing resources (12%, 9) were also reported as negative. Participants described numerous barriers in their negative CIs.

"At one point when I had asked for service from a librarian, it seems like her attitude downplayed my intelligence and because she was older and wiser my question wasn't of importance. The attitude of the librarian was not friendly and welcoming and I sort of felt embarrassed after asking for assistance." (Millennial)

"I tried to explain that I wasn't interested in doing a general search on my topic, but that instead I needed this specific article, but she never really listened, and instead I ended up wasting a significant amount of time.

The librarian was so overzealous with helping me that she lost sight of what I actually needed, which in this case was quite limited in scope, a specific item." (Adult)

8. QUALITATIVE RESULTS TELEPHONE INTERVIEWS

8.1 Positive CIs

Telephone interviews yielded 122 positive CIs. Seventy-nine percent (84) praised librarian's personal characteristics with 50% (61) of these crediting the librarians' knowledge/skills. Information aspects were primary in 49% (52) of CIs while 46% (49) simply found the librarians helpful. Some CIs related directly to FtF communication that included nonverbal communication cues. These comments exemplify positive CIs:

"Well, at my library they are all very approachable; they are just sitting at a desk waiting to help, kind of not judging i guess." (Millennial)

"I'm a elementary teacher, and my most recent experiences have been with children's librarians so I think it's mostly their knowledge, not just of the library catalog and ways of manipulating the catalog but what material is out there ... it's very beneficial." (Adult)

8.2 Negative CIs

Telephone interviews yielded 112 negative CIs. The greatest proportion (23, 21%) centered on librarian's characteristics, including being unapproachable or lacking knowledge. Others (13, 12%) thought librarians' were not helpful, did not answer the question, responded slowly, or gave too simple a response. Examples of Negative CIs include:

"I felt the FtF helped to make it successful. I was in front of her and the information was straightforward and she looked me face to face. In an email she would not be in front of me and I would not know if she was being truthful." (Millennial)

9. DISCUSSION AND IMPLICATIONS

Although accuracy and correct answers and the delivery of specific content were reported as the most important factors of successful reference interactions, non-users of VRS also value librarians who are knowledgeable about information sources and systems, display a positive attitude, and demonstrate good communication skills.

Non-users of VRS are not aware that the service is available. Results from both interviews and surveys reveal that they

consider convenience to be a major factor when choosing how to get their information. Respondents prefer to interface with friendly librarians and to develop ongoing relationships with them. The majority used FtF as well as telephone and email reference services. They found email reference to be the least intimidating mode of communicating with a librarian for a reference query, but most preferred FtF because they felt the interaction was more personal, more efficient, and enabled them to better communicate with the librarian. Although most preferred FtF reference services and believed the library is convenient, some said online sources are more convenient than physical library materials because of remote access.

Many of the non-users did not believe a librarian could help them or know that VRS was available. Both Millennials and adults were satisfied with other information sources; therefore, did not need to use VRS. Human resources, such as family, friends, teachers, and colleagues were identified as prime information sources. The Web was identified as an alternative for the library and was used for "personal convenience." The non-users might use VRS if it were available 24/7 and if they could receive information quickly.

Some differences in communication and information seeking behaviors were found between Millennials and adults. A personal relationship with a librarian was more important to Millennials who also valued the librarians' friendliness and politeness in interpersonal communications more than adults. A greater number of adults than Millennials believed that chat reference would be too complicated; therefore, chose not to use it. The adults were concerned that their typing skills were not adequate to communicate with a librarian via chat. On the other hand, Millennials were more concerned than the adults that their questions would annoy or bother the librarians.

10. CONCLUSION

In these tight budget times, library service providers must seek to understand non-users of the library to better meet their particular needs and preferences. The above findings have numerous implications for librarians who are involved in making decisions that will have a positive effect on sustainable VRS in the future. Results can be used for system development, improving VR practice, and for theory development. The voices of the little-studied non-user population provide powerful evidence that libraries need to step up marketing of these services. Once these potential users are aware that the services exist, that virtual librarians are accurate as well as friendly, and are knowledgeable and technically competent, these non-users can be enticed to view virtual services as a viable and attractive alternative to FtF, telephone, or email reference.

11. ACKNOWLEDGEMENTS

The authors would like to acknowledge the help of Erin Hood and Timothy Dickey of OCLC and Jocelyn DeAngelis Williams of Rutgers University.

12. REFERENCES

- [1] Watzlawick, P., J. Beavin, and D. D. Jackson. 1967. *Pragmatics of Human Communication*. Norton.
- [2] Goffman, E. 1967. *Interaction Ritual, Essays on Face-to-Face Behavior*. Doubleday.
- [3] Radford, M. L. 1993. Relational aspects of reference interactions: A qualitative investigation of the perceptions of users and librarians in the academic library. PhD diss., Rutgers, The State Univ. of New Jersey.
- [4] Radford, M. L. 1999. The Reference encounter: Interpersonal communication in the academic library. ACRL, A Division of the American Library Association
- [5] Radford, M. 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, 1046-59.
- [6] Radford, M. L. 2006. Interpersonal Communication in Chat Reference: Encounters with Rude and Impatient Users. In: *The Virtual Reference Desk: Creating a Reference Future*, ed. R. D. Lankes, E. Abels, M. White, and S. N. Haque, 41-73. Neal-Schuman.
- [7] Charmaz, K. 2006. *Constructing Grounded Theory: A Practical Guide through Qualitative Analysis*. Sage.
- [8] Flanagan, J. C. 1954. The Critical Incident Technique. *Psychological Bulletin*. 51, 327-58.
- [9] Ozkaramanli, E. 2005. Librarians' Perceptions of Quality Digital Reference Services By Means of Critical Incidents. Doctoral Thesis. University of Pittsburgh.
- [10] Strauss, A., and J. Corbin. 1998. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. 2nd ed. Sage.
- [11] Radford, M. L. 2006. The Critical Incident Technique and the Qualitative Evaluation of the Connecting Libraries and Schools Project. *Library Trends* 54(1), 46-64.
- [12] Twelve Radford, M. L., and L. S. 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/projects/synchronicity>.
- [13] Radford, M. L., and L. S. Connaway. 2007. "Screenagers" and Live Chat Reference: Living Up to the Promise. *Scan*. 26(1), 31-9.
- [14] Connaway, L. S., M. L. Radford, T. J. Dickey, J. D. Williams, P. C. Confer. 2008. Sense-making and Synchronicity: Information-Seeking Behaviors of Millennials and Baby Boomers. *Libri*. 58, 123-35.
- [15] Connaway, L. S. 2008. Make Room for the Millennials. *NextSpace*. 10, 18-9. <http://www.oclc.org/nextspace/010/research.htm>

NOTES

ⁱ This project was funded by a grant from the [Institute of Museum and Library Services](#) (IMLS) and in-kind contributions from [Rutgers](#), The State University of New Jersey, and OCLC Online Computer Library Center, Inc., 2005. Grant website is <http://www.oclc.org/research/activities/synchronicity/default.htm> [12]

ⁱⁱ QuestionPoint "provides libraries with tools to interact with users in multiple ways, using both chat and email." OCLC Web Site <http://www.oclc.org/us/en/questionpoint/default.htm>

ⁱⁱⁱ The authors have provided in-depth discussions of the characteristics and behaviors of the Millennial Generation [13-15].

^{iv} One respondent did not reveal their age and is not included in Millennial/Adult counts so N=290, otherwise respondents total N=291.

^v Grammatical errors have not been corrected, although minor spelling errors have been corrected in quotations from participants..