Hamline University
# DigitalCommons@Hamline

School of Education Student Capstone Theses and Dissertations

School of Education

Fall 12-13-2016

# VIRTUAL REFERENCE BEST PRACTICES AND THE COLLEGE STUDENT EXPERIENCE

Sara J. Stambaugh
*Hamline University*

Follow this and additional works at: https://digitalcommons.hamline.edu/hse_all

Part of the Education Commons

VIRTUAL REFERENCE BEST PRACTICES AND THE COLLEGE STUDENT

EXPERIENCE

by

Sara J. Stambaugh

A capstone submitted in partial fulfilment of the requirements for the degree of Master of

Arts in Education.

Hamline University

Saint Paul, Minnesota

December 2016

Primary Advisor: Trish Harvey
Secondary Advisor: Suzanne Schriefer
Peer Reviewer: Rochelle Murray

To Mike and Josephine, I could not imagine undertaking this project without your love, understanding, and patience. To my family and friends for your ever-persistent love, encouragement, and support. Thank you to my Capstone Committee. Your guidance, input, and thoughtful questions helped me to make this project the best it can be. A special thank you to my colleagues, peers, and research participants – without you this project would not have been possible.

"[Librarians] open up the world. Because knowledge is useless if you don't know how to find it, if you don't even know where to begin to look."
-Patrick Ness

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

TABLE OF FIGURES

**CHAPTER ONE**

**Introduction**

**Library School Origins**

My interest in virtual reference services took root while I was working on completing my Master of Library and Information Science degree. While most of my reference classes focused on the in-person reference interview, there were several instances where our role-playing and assignments centered on virtual reference transactions, either via email or a chat room environment. At the time, I found these virtual reference scenarios fascinating. Though not a new way of interacting with library users, it was the most intriguing. Much can be lost in a conversation due to the absence of facial expressions or body language and I was intrigued by the different uses of leading versus open-ended questions in the virtual environment. Best practices were discussed in class, but not at length, which led me to wonder *what are today's best practices in online reference, and how can librarians at academic institutions improve the student experience in online reference transactions?* I wondered if I could build a best practices document for an academic library that might aid in enhancing the student experience in virtual reference transactions.

My studies branched out from there. I began learning about the duties that most non-librarians do not think about when they use the library. After all, being a librarian is not just about answering questions about where a book is, where the bathroom is, and knowing the Dewey Decimal system. Cataloging and managing an online library catalog where the electronic data about books, journals, videos, and ephemera is stored and made

searchable by patrons was the next step in my learning. I was exposed to the world of

metadata, data about data which enables users to search and find items in a database or

catalog. I also took a class that exposed me to the world of HTML and building websites,

which morphed into learning about how effective library websites are built and

understanding user experience. If a website is difficult to understand, use, or navigate,

people will avoid it; in the world of virtual library services this can be a death sentence

for a library. Paired with my understanding of metadata and cataloging, my interest in

making information easily accessible to users was born.

**Virtual Reference in the Academic Library**

Shortly after being hired as a librarian at an associate's and bachelor's

degree-granting institution based in the Upper Midwest, which offers degree programs in

Accounting, Business Management, Criminal Justice, and other areas, including the

Health Sciences, I had my first encounters with virtual reference services. Virtual

reference, for clarification purposes, is defined as "a synchronous, computer-based

question answering service where users of the service ask question(s) which are answered

by library employees…" (Matteson, Salamon & Brewster, 2011, p. 173). In the context of

my research, virtual reference excludes email but includes real-time online chat, also

known as instant messaging.

I was trained on the institutional chat tool called LibChat provided by Springshare

(see Appendix E), which, as I came to find out, was a recent acquisition. LibChat did not

have screen-sharing or voice-over-internet capabilities and interactions were limited

solely to typing text and the ability to upload/download files for sharing. LibChat was

replacing Meebo (a different chat system) and was easily integrated with other products that the library was subscribing to from Springshare (Springshare, n.d.a). One of those other products recently added to the institution's holdings was LibAnswers – a frequently asked questions database that could be built out as students have questions about how to find, navigate, and understand the various resources available through the library. Students could submit questions to a virtual queue (similar to an email inbox, but fully hosted in the cloud), and librarians would go in and claim a question, answer it, and the answer would then be emailed to the student. If it was a question that was not already in the database it would be integrated for other students to find in the future. While LibAnswers was left out of the scope of virtual reference services due to its asynchronous nature, it is important to note that it helped to support our virtual reference services. Quick reference question and answer pairs cut down on the amount of time and typing that were required when helping with frequently asked questions. Instead of typing out instructions in the chat session a link could be provided to step by step instructions and how-tos.

I really enjoyed the complexities of online chat and answering questions in LibAnswers. It was an intellectual exercise to guide students to finding an answer to their homework or research questions without giving them that answer outright. Best practices about how to navigate tricky questions and how to help frustrated students were shared amongst librarians, but were not formally written down until later in my tenure. Approximately a year and a half after my initial foray into virtual reference, I was tasked with the guidance of my supervisor, with creating the standards and best practices

document that my department currently uses for virtual reference transactions. We pulled

language and guidelines from the Reference and User Services Association's (RUSA),

*Guidelines for Behavioral Performance of Reference and Information Services Providers*

(2008), as well as created some of our own standards. However, all our best practices

were based on the experience from the librarian side of the chat room, not the student's.

Librarians receive formal training regarding resources and how to direct students to

access resources, however, a common barrier includes the language used and often this

leads to miscommunication or misunderstandings between what librarians mean and what

students understand. Taking into account the student experience, their language, and their

level of understanding coming into a chat session would benefit the student by allowing

the librarian to meet them at their level and communicate meaning more effectively.

**Virtual Reference Today**

In my current position as the digital services librarian, I am not only in charge of

managing our virtual reference presence, but in collecting statistics about the use of our

online tools, reference services, and resources. My department staffs online chat service

for a total of 54 hours over 7 days a week. While chat has been successful in the year and

a half since the internal publication of our best practices document, there are times when I

have questioned if our day-to-day interactions are helping students become critical

thinkers or if we are merely a crutch to help them through their learning.

Evidence of our success or failure in online reference is currently evaluated using

a built-in Likert scale (rating from 1 [bad] to 4 [great]) and a comments box where

students can leave feedback or comments about their online reference experience. This

feedback option pops up after a session has ended, and is an optional experience for students. According to our statistics, in the past year only about a quarter of students take the time to rate their experience, and of those who rate only about a quarter of those leave a comment. While this might not seem like a lot of data, when you factor in the sheer number of sessions that have were conducted from January to December 2015 (about 8,500), the number of ratings is significant and the feedback produced – while not always helpful – is also statistically significant. So how does this all fit into the larger academic picture?

**Transferable Skills and Virtual Reference**

My institution is becoming more focused on teaching transferable skills as part of students' curriculum. Soft skills like critical thinking, communication, information literacy, digital fluency, and ethics and professional responsibility are being integrated into the curriculum. Because the online library has been built to supplement and support the academic curriculum, I want to be sure that my coworkers and I are also helping to support students in their learning. Ethically, it is not my (or any librarian's) job to just give students the answers to their homework question. Even though our online reference service (chat) is present in the resources tab of all the online classes and at almost every point of online access our students have we want to ensure that our students are presented with an opportunity to learn from us. Through virtual interactions we are able to help teach information literacy, digital fluency, communication, and critical thinking skills. Many students appreciate being guided towards resources and left to find the answers to their questions themselves. For example, when someone enters a chat room with a

librarian they might ask how to find information about the similarities and differences between Artistotle's and Socrates' views on government. Our first question might be to find out how familiar they are with the online library. Have they ever searched a database before? If necessary, we would point them to a brief tutorial about choosing a database where they would be most successful finding the information they are looking for, how to come up with keywords, and how to assess the results that are returned based on their search terms. Most of the time their question might require analysis of a couple different sources to come up with an answer so we might also provide guiding questions that they can ask themselves as they critically examine the information they have found. An article about Aristotle's views on government says XY and a different article about Socrates' views says YZ. How are their views the same? How are they different?

However, there are students who come with a question and expect a clear and immediate answer. They want us to find them the "perfect" article for their research, or give them the answer to a math problem, or link them to a resource that explains what they need to know in a nutshell. These students are the ones who sign off in a huff, or leave a low rating and/or feedback about the "unfriendliness" or "unhelpfulness" of the librarian they interacted with, or who return to the chat room an hour later hoping to be connected with a different librarian who will just give them what they want. While my team is well-versed in managing these situations, I cannot help but think about the times when we slip up; when we get frustrated with a student and just give them what they are asking for, or when a student comes back and the next librarian on duty gives them what they want without question.

This continuity of care is addressed somewhat in our existing best practices documentation, but these existing best practices could use updating. I know there is no way to plan for every contingency, but the continuity of communication between librarians and laying out clear expectations for students is an area where our library could use some improvement. Since it is my job to oversee the library's online presence, I want to ensure that both the students and the librarians at my institution are working together to enhance the student learning experience when it comes to virtual reference.

**Forming an Approach**

**Library practices.** Working on updating our institutional best practices got me thinking about other libraries that provide a similar service. The American Library Association (2014) reported that by "fiscal year 2012 about three quarters (75%) of academic libraries reported that they supported virtual reference services," and "77%, reported providing library reference service by email or the web" (para. 9). How do these libraries see their roles? What sort of guidelines have they implemented internally? What are their guiding principles? Before I began my research I decided to do a survey of other librarians at both similar and dissimilar institutions. This initial exploration provided me with a direction in which to focus my research inquiries.

An informal survey was distributed via an information literacy listserv email to librarians who are members of the American Library Association. In addition to the email I tweeted a link to the survey to my 78 Twitter followers, most of whom are librarians at institutions in the same geographical region as the institution for which I work. The survey garnered a total of 133 responses from librarians across the United States. One

hundred twenty seven of the survey respondents identified themselves as academic

librarians, 3 identified as public librarians, 1 as a governmental/law librarian, 1 as a

special collections/archival librarian, and 1 as "other." This large sample of other

academic libraries provided me with a good look into the practices of institutions that

have the same educational goals as my own. When asked if their institution offered

virtual reference services, only 1 respondent indicated that they only provided in-person

reference services. Nine respondents indicated the provided virtual reference services

(including over the phone or email, but not including chat or instant messaging [IM]

reference), and 123 respondents indicated that they provided virtual reference services

that included online chat or IM reference. The participants who provide virtual reference

services were the ones my survey then honed in on.

For the next two questions, I defined a virtual references best practices document

as "a document outlining what virtual reference services will and will not help with when

it comes to research and homework assistance. For example, the document might include

expectations about chat etiquette, what a student can expect from chat in terms of help,

and/or a list of services that are not provided by the library chat staff." Of the 127

responses to the question of whether their institution had a document or policy similar to

the description, 35 percent indicated that they have a document or policy like the one

described, 59% indicated that they do not have a document or policy like the one

described, and 5.5% indicated that they did not know if such a document existed at their

institution. I was surprised that the number of institutions that do have virtual reference

best practices was fewer than the number that did not. I expected more libraries to have

standard operating procedures for their interactions with patrons. Taking a closer look at

the 45 respondents (35% of total respondents) indicating that they did have a best

practices document: 15.5% said that their document is available for anyone to view, 73%

indicated that the document/policy was for internal staff use only, 7% indicated that they

had two best practices documents-one for internal use and another for public use/view,

and 4% were not sure what the availability of their institution's document/policy was.

These results were less surprising. I was leaning towards creating two separate

documents for my research, but my personal experience has been that documents like

these tend to be distributed for staff use only. My goal is to improve the student

experience in online reference transactions and in order to measure the success of that

goal I feel it would benefit students to be informed as to what the expectations are for

them.

   **Student perspectives.** Before I took on the task of updating our institutional

best practices, I decided that I wanted to round out the perspective. With the permission

of my department head and our internal research department I surveyed a cross-section of

students at my institution. I wanted to find out how familiar current students are with my

institution's online chat service and what they thought about publicly available

expectations for students who use it.

   With the help of my colleagues, an informal survey was sent to approximately 50

tutors and peer leaders within my institution. Twenty students responded to the survey:

15% of whom had completed between two and three quarters worth of classes (my

institution runs classes on a 13-week or quarterly schedule), and the remaining 85%

indicated that they had completed four quarters (1 year) or more of classes. While this

sample of students was not as large as I had hoped, it was enough for me to get a general

idea of the perceptions of our chat service. On a scale of 1 to 4, with one being not

familiar at all and 4 being very familiar, 75% of the respondents indicated that they were

somewhat to very familiar with the chat service, 15% indicated that they were aware that

the service existed but had never personally used it, and 10% indicated that they were not

familiar with the chat service at all or had never used it. These results seemed to be

proportional to the general student population since the current iteration of the online chat

widget was located almost everywhere students might want to reach out for a librarian's

help. More heartening to me was that 16 out of the 20 peer leaders/tutors (80%) who

responded to the survey indicated that they have referred a student that they worked or

went to class with to the library chat service. Word-of-mouth is a strong indicator that our

virtual reference services are seen as helpful or beneficial.

Similar to the survey sent out to librarians, I also asked the students if a best

practices document (described as: "a document outlining what a chat service will and will

not help with when it comes to research and homework assistance") would be helpful to

them as a student. Seventeen (85%) of the respondents indicated that a document like the

one described would be helpful, 2 (10%) were unsure if such a document would be

beneficial, and 1 (5%) indicated that it would not be helpful at all. When asked if they

thought a document like the one described might be helpful to the average student who

uses the library chat service the same numbers applied. The next survey question pointed

to one of the aspects of my research that I was most concerned about: where would

students expect or want to see a list of student expectations laid out? Half of the

respondents indicated they would expect to find such a document near or in the chat

widget, 45% would expect to find it on the library home page, 40% would want it listed

in the resources tab or syllabus for their classes, and 35% would expect it to be listed in a

library tutorial. Two students specifically commented that they would expect it to be

linked or listed as a disclaimer in the library chat widget prior to starting a chat session.

When asked for specific feedback about the library chat service and/or best

practices that the peer leaders/tutors felt might make the service better, five responded

that they felt the chat service was wonderful but that it ought to be promoted more

because it can be easy to miss. One respondent specifically said that it has been their

experience "that the majority of students do not utilize the resources available and do not

complete thorough research of the resources they do use. The best practices should be

shared as a pop-up or a disclaimer that has to be acknowledged by the user prior to

starting a session." Just providing a link to a document "would not prove an effective way

to communicate with students." This commentary was exactly what I was hoping for by

asking an open-ended question. It solidified that merely having a document for students

to view would not be sufficient, I would need to make it a part of the virtual reference

experience in order for it to truly have an impact.

**Looking Ahead**

With the feedback from peers and the student population that our best practices

will serve, I updated our virtual reference standards. In the following chapters, my

literature review and research plan focuses on exploring virtual reference best practices

and the implementation of those practices. Specifically, I focused on answering *what are today's best practices in online reference, and how can librarians at academic institutions improve the student experience in online reference transactions?* By measuring the responses of students once my department implemented the new guidelines I hope to gain insight into the improvements that were made and use that insight to drive further improvements in practices across my department. Chapter two of this capstone examined a little of the history of virtual reference practices, look at the difference between practices in commercial versus research and academic applications, and explore the existing guidelines set out by the American Library Association.

**CHAPTER TWO**

**Review of Literature**

The creation of virtual reference standards should take into account any currently existing expectations by staff and users. Chapter one introduced virtual reference services and took a look at the possible approaches for creating best practices documentation. Exploratory surveys of other librarians in academic settings as well as students who will be affected by this capstone provided a direction for further research into understanding best practice guidelines and the challenges that are represented when attempting to assess implementation. Specifically, the following literature review will help answer the question: *what are today's best practices in online reference, and how can librarians at academic institutions improve the student experience in online reference transactions?* The literature review explored the history of virtual reference, defined commonly used terms, and explored best practices in the library community including the guidelines established by governing bodies for libraries in the United States. In addition to the guidelines in the library world, standards for virtual reference and online chat in commercial industries were discussed. Furthermore, the literature review incorporated the assessment of best practices and the challenges that are represented when attempting to assess the student experience. In totality, the literature review provided a foundation of knowledge to build a set of best practices and conduct a study regarding their efficacy once implemented in a higher education virtual reference setting.

**History of Reference Services**

Reference services in historical and current contexts are defined as services "in which library staff recommend, interpret, evaluate, and/or use information resources to help others to meet particular information needs" (Reference and User Services Association, 2008, para. 1). Reference services in libraries in the United States have been around since the mid-1800s. The first record of reference services being provided was evidenced at Columbia College in 1857, when the librarian remarked about his job, "The Librarian is really an instructor, as much so as a professor, though without the title.... He necessarily comes in aid of the professor-as the Library is, as it were, an upper lecture-room for illustration and expansion of... classes" (Columbia University, 1857, p. 5). Additionally, Singer (2010) cited Spofford's statement in 1876, "That is the best library, and he is the most useful librarian, by whose aid every reader is enabled to put his finger on the fact he wants just when it is wanted" (p. 253). These in-person services are what people think of when library reference is discussed today. As time wore on, reference work evolved to include other modes of information transmission.

In 1941, the Cleveland Public Library implemented a telephone reference service for patrons who needed help locating information (Singer, 2010, p. 254). By the 1960s, as automated cataloging systems and databases started to become more prevalent, and "some librarians were concerned that people that specialized in information retrieval using computers would replace reference librarians" (Singer, 2010, p. 257). A valid concern at the time, it did not prove to be completely true; instead, the use of online databases and catalogs transformed reference work. A survey done by Tenopir and

Neufang in 1995 revealed that of the 121 member libraries of the Association of Research

Libraries (a division of the American Library Association), 77 percent were offering

public access to the internet. Increased access to the World Wide Web provided students

and other users with the ability to search and find information for themselves.

      With the explosion of information available via the internet, librarians began to

find themselves on both sides of a dichotomy. On one hand, they were no longer needed

as guides to traditional print sources for information, and on the other hand they began to

be relied on more heavily to help patrons distinguish between reliable and unreliable

source material. Digital reference services were thus born. Digital reference is defined as

"human-intermediated assistance offered to users through the Internet" (Lankes, Gross, &

McClure, 2003, p. 402). Examples include reference via email and web-based forms.

Matteson, Salamon, and Brewster (2011) took the definition one step further, and for the

purposes of this capstone defined the term *virtual reference* to mean, "a synchronous,

computer-based question answering service where users of the service ask question(s)

which are answered by library employees…" (p. 173). Examples of virtual reference thus

exclude email but include real-time online chat, also known as instant messaging. There

is no consensus on exactly who started and when virtual reference services originated,

however, Matteson, Salamon, and Brewster (2011) identified two universities

experimenting with synchronous video chat in 1996. Chat services started to become

more popular in the late nineties and early 2000s with the advent of instant messaging

(IM) software such as Yahoo Chat, America Online's AIM, and Microsoft's MSN

Messenger. The American Library Association (2014) reported that by "fiscal year 2012

about three quarters (75%) of academic libraries reported that they supported virtual

reference services," and "77% reported providing library reference service by email or

the web" (para. 9). As these services have developed over the past two decades, so too

have best practices and guidelines for supporting virtual reference services been

established.

**Best Practices in the Library World**

Virtual reference services and best practices seem to be a topic of great interest in

the library community as demonstrated by the plethora of literature surrounding the topic.

The library community, as defined by this capstone, primarily focuses on academic

libraries but also includes public and special collections libraries as well.

**Guidelines from governing bodies.** The Reference and User Services

Association (RUSA), an association governed by the American Library Association

(ALA), created a set of guidelines to "assist libraries… with implementing and

maintaining virtual reference services" (American Library Association Reference and

User Services Association [ALA-RUSA], 2010, p. 1). Set out in sections pertaining to

purpose, definitions, preparation, provision, organization, and privacy of virtual reference

services, the guidelines are simply "meant to provide direction, without being overly

prescriptive" (ALA-RUSA, 2010, p. 1). Most notably, ALA-RUSA (2010) made the

following suggestions:

1. As part of preparation, "involve representative members of the target audience in

    planning and promotion" (p. 2);

2. When assessing virtual reference services, do so regularly and follow through with implementing adjustments as needed;

3. When providing the service, "make guidelines for appropriate behavior while using the service available to patrons" (p. 3);

4. "Define… the level of service to be provided so that staff and patrons will understand the mission" and "include the types of questions the service will answer (perhaps easier to define in the negative)" (p. 3);

5. "Establish guidelines… for determining which queries fall outside the parameters of service and how to respond in those cases" (p. 3);

6. When looking at organization, make sure that ongoing evaluation of effectiveness and efficiency are regularly considered. Evaluations may include "methods such as the analysis of usage statistics, patron feedback, and reviewing transcripts" (p. 7);

7. Privacy is a concern for both libraries and patrons, so all communications should be kept private and confidential except as required by law. As such, "make privacy policies… publicly available" (p. 8).

In 1996, ALA-RUSA published a list of guidelines for behavioral performance in reference interactions. These guidelines are specific to the content of a reference transaction in terms of visibility/approachability, interest, listening/inquiring, searching, and follow up. In 2013, the guidelines in this publication were updated and broken out into three distinct categories: general, which include frameworks that can be applied in any type of reference interaction; in person, which are specific to face-to-face and video

inquiries; and remote, which are tailored to encounters such as over the phone, virtual, text-based chat or IM, email, and internet-based voice-only. For the purpose of this capstone, only the general and remote categories will be referred to in the remainder of this subsection.

When it came to visibility and approachability, ALA-RUSA (2013) asserted that it is essential to "be approachable… the librarian's first step… is to make the patron feel comfortable in a situation that can be perceived as intimidating, confusing, or overwhelming" (sect. 1.0). Specifically, the librarian:

1. Should be highly visible. There should be "proper signage or notification that indicates the location, hours, and availability of… assistance" (sect. 1.1.1);

2. "Acknowledges patrons by using a friendly greeting to initiate conversation" (sect. 1.1.3);

3. "Provides prominent, jargon-free pointers" to all services via the library's web site (sect. 1.3.1);

4. "Responds in a timely fashion to remote queries" (sect. 1.3.2).

While not a comprehensive list of all the things librarians can do to be visible and approachable for reference help, the four points listed above are the most useful when it comes to defining specific behavioral practices in virtual reference transactions.

ALA-RUSA (2013) went on to explain that "successful librarian[s] demonstrate a high degree of objective, nonjudgmental interest in the reference transaction" (sect. 2.0). Providing help tends to be more effective and satisfying to patrons when librarians

embrace and are committed to individual inquiries. Most notably in this section,

ALA-RUSA (2013) stated that to best demonstrate interest, the librarian should:

1. "Focus complete attention on the patron and his/her informational need" (sect.

   2.1.1);

2. "Acknowledge user questions in a timely manner" (sect. 2.3.1);

3. "Maintain regular… contact with the patron to convey interest and provide

   assurance that the query is still viable and a response is forthcoming" (sect. 2.3.2).

In addition to showing interest, communication (e.g. listening and inquiring) is crucial to

the success of reference transactions. ALA-RUSA (2013) defined effective librarian

communicators as demonstrating:

1. Communication in a positive and cordial manner (sect. 3.1.1);

2. The re-statement of the "goals and objectives of the patron's research, when

   appropriate" or for clarification (sects. 3.1.4-3.1.5);

3. Use of "open-ended questions to encourage the patron to… present additional

   information" (sect. 3.1.7) or, on the other hand, the use of "closed and/or

   clarifying questions to refine the search query" (sect. 3.1.8);

4. Respect for patron privacy and confidentiality, even when gathering "information

   to serve the patron's need" which may entail the gathering of identifying

   information (such as name or email address in a remote transaction) (sect. 3.2.1).

   The search process is the fourth guideline specific to the content of a reference

transaction. This process should be effective and encouraging to the patron. ALA-RUSA

(2013) advised that as an effective searcher, the librarian:

1. Should find out "what the patron has already tried, and encourage [them] to contribute [their] own ideas" (sect. 4.1.1);

2. "Explains the search strategy to the patron" (sect. 4.1.3) and "explains how to use sources when appropriate" (sect. 4.1.7), which may encourage and empower the patron to try new strategies on their own in the future (sect. 4.1.8);

3. "Recognizes when to refer patrons for more help. This might mean a referral to a subject librarian, specialized library, or community resource" (sect. 4.1.9);

4. "Asks the patron if additional information is needed after results are found" (sect. 4.1.10).

As the final part of a reference transaction, ALA-RUSA (2013) noted that it is important to remember that while information might have been sufficiently provided, follow up should be considered. Patron satisfaction is the true end-goal, and it is up to the librarian to ensure that no further referrals are necessary. In section five, ALA-RUSA (2013) considered successful follow up by a librarian to include:

1. Asking "the patron if his/her questions have been completely answered" (sect. 5.1.1);

2. Referral "to other sources or institutions if the query has not been answered to the satisfaction of the patron" (sect. 5.1.6);

3. "Tak[ing] care not to end the reference interview prematurely" (sect. 5.1.7);

4. "Encourag[ing] the patron to contact the library again if he/she has further questions" (sect. 5.3.1).

These guidelines helped inform not only who should be involved in the creation of best practices but they also loosely defined the behaviors and expectations that should be included in the virtual reference environment. This foundation for virtual reference services in libraries provides a structure individual institutions can follow when creating and implementing their own services.

**Practices of other institutions.** In addition to the guidelines prescribed by ALA-RUSA, other library institutions have implemented their own best practices when it comes to virtual reference. Van Duinkerken, MacDonald, and Stephens (2009) compared guidelines for reference interviews established by ALA-RUSA with actual reference provider behaviors in remote (or virtual) reference transactions. The authors argued that best practices should be developed for virtual chat and instant messaging (IM) transactions that differ slightly from the previously established reference interview guidelines, which include face-to-face, over the phone, and email transactions. This argument was made based on chat transcript analysis and the fact that many users who utilize virtual reference services do not require a full reference interview.

Nilsen and Ross (2006) undertook an evaluation of virtual reference services from the user perspective at the University of Western Ontario. Their assessment was based on the results of an assignment for a course in the Master of Library and Information Science program at the university. "Students were asked to approach a virtual reference desk provided by a Canadian library and ask a question that interested them personally" (Nilsen and Ross, 2006, p. 55). Their findings included features of virtual reference

services that the students reported as being helpful. Specifically, Nilsen and Ross (2006) noted the following responses from their study:

- The chat interface is easy to navigate to and from the home page.

- As soon as I submitted my question, I received a notice thanking me for my question and informing me that a librarian would be with me soon. This reassured me.

- The librarian gathered sufficient information about my need in order to answer the question.

- If the librarian is friendly and patient, many patrons will feel that they have had a successful reference transaction even if they do not get the answer they are looking for.

- I realized that digital reference is similar to in-person reference in that much of my satisfaction was determined by my assessment of how well I had been treated, as much as by my reaction to the answer I received (pp. 65-66).

The Nilsen and Ross (2006) study also identified a few features of virtual reference services that were unhelpful. Specific themes surrounding the lack of guidance about who could use the service and what kinds of questions that it was intended for emerged. A lack of acknowledgement and inclusion, including long response times and insufficient explanation about answers provided were also barriers to successful virtual reference transactions. Nilsen and Ross (2006) concluded that taking the time to clarify questions, focusing on quality rather than speed, and maintaining contact with the user were three of the most important aspects of virtual reference for librarians to focus on.

Ward and Barbier (2010) reported on their experiences with Florida's consortial virtual reference program. Consortia often form when multiple libraries in a region, or of a specific type, band together to provide more streamlined services for a larger population of people. In Florida's case, the consortia includes both public and academic libraries and is thus based on geographical location rather than a specific library or patron type. In their study, Ward and Barbier (2010) listed some of the quality assurance guidelines that the Florida consortium used to define exemplary chats. First, the librarian must demonstrate the qualities of accuracy, authority, objectivity, currency, and scope (Ward & Barbier, 2010). Second, librarians who performed reference interviews that included asking questions to clarify information needs and provided information from library resources whenever possible (citing that "proprietary databases are better than a Google or Yahoo" search) were also considered laudable (Ward & Barbier, 2010, p. 55). Additionally, librarians who were "unable to locate an authoritative answer to a question in a timely fashion..." demonstrated the ability to "...either get back to the patron in a few hours (do a follow-up) or refer the question to a local library" (Ward & Barbier, 2010, p. 55). Ward and Barbier (2010) also identified excellence in transactions where librarians "establish and maintain good rapport with patrons through: word contact, enthusiasm, and empathy" (p. 55). Most if not all of these exemplary qualities can be traced back to guidelines mentioned in the ALA-RUSA publications.

**Industry Standards in the Commercial World**

In addition to the guidelines in the library world, standards for virtual reference and online chat in commercial industries should be taken into account. Libraries are

essentially a customer service industry so examination of the commercial world standards for similar chat services are beneficial when defining best practices.

Elmorshidy (2013) examined live customer support chat within two theoretical frameworks that are well-known in the commercial industry: the technology acceptance model and the service quality model. The technology acceptance model was refined in the early nineties to include five key areas of service which specifically focus on the customer expectations: reliability, responsiveness, assurance, empathy, and tangibles (Elmorshidy, 2013). Customers expect service quality, even in online transactions, to be dependable and accurate. Customer service agents should be willing to provide prompt service with courtesy and confidence, making the customer feel cared for on an individual level. This leads to customer confidence in the technology and product being delivered. Elmorshidy (2013) went on to explain that the service quality model is much the same. Service quality is essentially broken down into six dimensions: system quality, system reliability, system availability, information quality, consistency of service quality, and online customer feedback. Each of these dimensions affect "the online customer 'expected service' as well as his 'perceived service'" (Elmorshidy, 2013, p. 591). Elmorshidy (2013) then proposed that "the gap between the expected service and perceived service of live customer service chat will determine the service quality provided by that system as well as the customer satisfaction degree" (p. 591). Essentially, actual service quality affects customer satisfaction, and both of these are affected by the perceived usefulness of the system being employed.

While Elmorshidy examined customer service live chat within the confines of theoretical frameworks, Jones (2014) took a practical standpoint. Jones (2014) asserted, "live chat can and should go beyond simply servicing the customer; it should be seen as a means to provide customer satisfaction and in turn help win customer loyalty" (p. 18). Jones (2014) went on to highlight three key areas for the realization of the full potential of customer service chat: representative's knowledge, tone and behavior, and technical aspects of a live-chat session. To start, Jones (2014) indicated the "live chat representative needs to be familiar with the multiple channels of customer-service support and delivery and be able to provide answers to the customer in the quickest way possible" (p. 18). Not only that, but the representative "needs to be clear on what he/she can provide and not over-promise or under-deliver" (Jones, 2014, p. 18). In terms of professionalism, being able to listen well and decode what the customer wants is pivotal. "Responses should be clear and concise, but offer more than a simple yes/no. A brief explanation following a yes or no can often answer the next question a customer may have" (Jones, 2014, p. 18). So it is not only important to give an answer but to explain a little of the why or how behind it. Jones (2014) suggested good customer service also includes a few technical tools on the customer-facing side such as "hours of operation, queue position, wait times, [and] typing notification" (p. 18). These tools help build trust between the customer and the live chat operator by giving the customer assurance that they are a priority.

Klimczak (n.d.) also discussed the importance of trust and assurance of the customer as a good way to build a customer base. "Asking 'How is it going?' opens up a

chance of creating that special kind of bond, a series of contacts that later turn into a relationship - where knowledge about customers usually goes far beyond their names…" (Klimczak, n.d., sec. "Know your customers by heart"). Klimczak (n.d.) also posited that the motivations behind the provision of live chat must also be taken into account. "...certain expectation about how should the chat work on the company's website must be defined before any development or technical work is done" (sec. "Online chat software"). Essentially, make sure that the expectations and practices for the implementation of virtual services are in place before providing service to customers. Chat is "a promise of an immediate help and a guarantee of access to a well-skilled advisor" (Klimczak, n.d., sec. "Live chat means real-time help"). Attention should be paid to response times, making use of tools like canned responses, and the use of proper language and grammar. Etiquette should be observed. "It's… a communication between (at least) two people and needs to be conducted with respect" (Klimczak, n.d., sec. Live chat etiquette").

McLean-Conner (2015) attended a customer service conference for utility companies in New England and found that many of the attendees were either already offering or planning to offer chat as a resource for customers. The author noted that "chat enhances customer satisfaction by personalizing the online experience and supports customers fulfilling transactions the first time in the online channel of their choice" (McLean-Conner, 2015, p. 6). Change the words a little and this statement reflects the current thinking about providing library chat services. Table 1 shows a few more of the best practices McLean-Connor (2015) went on to offer in comparison to a similar study done by Stormont (2010) at Pennsylvania State University library.

Table 1.
*Example of Commercial vs. Library Best Practices for Online Chat*

| Commercial - McLean-Connor (2015) | Library - Stormont (2010) |
|---|---|
| Customers should complete a sign-on process to initiate chat, the best sign-ons are short and do not require too many fields. | Be patient and wait for the initial question. |
| It is important to inform customers when chat is busy so they understand any potential delay in response. | Though the pace of virtual reference is fast, patrons are not necessarily in a hurry, it is okay to communicate that finding an answer is going to take some time. |
| The best agents provide a blend of canned responses and free-form edits. The use of emoticons and abbreviations are not appropriate. | Be succinct in online communication. |
| Correct spelling and grammar is preferred when responding to customers. | Do not be offended by preformatted greetings from students. |
| Use of customer names in transactions and adding in words such as "Okay," "Sure," and "Awesome," help reassure the customer that the agent is engaged and actively listening. | If an answer requires more time than the user has, ask if it will be okay to send a follow-up email. If so, make sure to get the full email address and send a response promptly. |
| Offering customers appropriate opening and closing statements is as important as the content of the conversation. | Do not worry about ending a session, leave it open so the patron can come back and ask additional questions if necessary. |
| If not offered around the clock, monitor transaction traffic to determine the best hours to support chat. Essentially, make sure that the website is clear about when the service is and is not available. | |

It is interesting to note the similarities between these two studies, the first in the field of customer service and the second in the realm of libraries. Both the customer service industry and the library best practices are patron/user-centric in that they strive to maintain a quality level of service. They each advise succinct communication, continual

check-ins to assure the patron the representative is still engaged, and patience when the

patron initially signs on to ask a question.

All of the literature seems to indicate that virtual reference services are essentially

a service provided to a set of customers or patrons. Service providers should be polite,

clear, succinct, engaged in the conversation, and open to follow-up communication. The

best practices in both the commercial and library industries will help inform the building

of institutional practices to be implemented during this capstone.

**Evaluation of Best Practices and Student Experience**

Implementing best practices is not the end of the road when it comes to virtual

reference. Ongoing identification, evaluation, and execution of new standards of practice

are crucial to the changing nature of online reference.

**Identifying and addressing challenges.** Ward and Barbier (2010) used chat

transcripts as well as a survey of virtual reference librarians to determine and demonstrate

the experience, challenges, and techniques used in real-world transactions. This study

identified the most frequently occurring pitfalls for exemplary chats in the evaluation of a

state-wide service: incomplete reference interviews; forgetting to check local

information; technical problems (e.g. patron/librarian disconnect, or screen-share will not

load or function); and poor rapport between the librarian and the patron (Ward & Barbier,

2010). The conclusions Ward and Barbier (2010) drew included "librarians are

resourceful. Reference interviewing guides the direction of research. Continuous

communication occurs despite patrons who stop 'to fix the washer'" (p. 64). Similarly,

Stormont (2010) enumerated a few challenges that should be taken into consideration

when utilizing virtual reference services: having no context for the patron (e.g. what program/class are they in, are they affiliated with the institution/library at all?); not knowing a person's skill level (e.g. with technology, familiarity with the library/resources); not having contact information to send a follow-up email; and not knowing when a question is "finished." When looking at best practices for virtual reference, these common pitfalls and challenges will be helpful in identifying what librarians might be able to anticipate and remedy before a reference transaction begins.

Many literature sources not only talked about challenges but also proposed ways of improving virtual reference services for patrons. Shaw and Spink (2009) addressed and identified a few best practices for university library virtual reference services relating to chat and email service, collaborative service provision, services staffing, and staff training. The authors suggested that a Frequently Asked Questions (FAQ) database, available on a website for patrons as well as service providers, is a preferred way of improving virtual reference services. "Allowing patrons to use self-service can… reduce the number of repetitive or straightforward operational questions handled by staff" (Shaw & Spink, 2009, p. 195).

Additionally, Ward and Barbier (2010) highlighted the need for basic competency of the librarians who conduct online transactions. Through training and review of chat transcripts librarians can be recognized for their excellent practices in managing real-time reference questions. "Publishing… exemplary chats… also supports the ongoing learning process for all staffing librarians. Good samples are always available for all librarians who are seeking to improve their online reference skills" (Ward & Barbier, 2010, p. 54).

Providing samples of exemplary chats alongside the criteria used to rate the chat transcripts helped librarians analyze the quality of their service. In conjunction with quantitative assessments, such as student ratings, a qualitative measure like transcript analysis would be beneficial for training purposes.

     **Evaluation methodologies.** Kuruppu (2007) discussed evaluation methodologies and the history of reference services. Specifically said about digital reference services, "because digital reference transactions leave records of the actual question and the librarian's response and other related information, they provide additional evaluation advantages over the traditional desk reference transactions" (para. 10). Kern (2006) seemed to concur:

     "Traffic counts and patron affiliation do not make a total plan for evaluation. These measures do not answer the bigger questions of how do patrons use our service, how accurate are our answers, and how satisfied are our patrons with the assistance we provide." (p. 105).

Kuruppu also talked about quantitative versus qualitative research methods and seemed to conclude that the two are best used in a complementary fashion. Quantitative research methods outlined include reference statistics, surveys, and questionnaires. Qualitative research methods outlined include observations (e.g. focus groups, individual reference transactions), interviews, and case studies. "Providing effective, high quality user-centered reference services depend on in-depth understanding of deficiencies inherent in the services, which can be achieved only by critically evaluating the reference services that libraries provide" (Kuruppu, 2007, para. "Conclusions"). Kuruppu (2007)

also concluded "libraries need a complete understanding of their services and therefore can no longer rely on a single research methodology in evaluating their reference services" (para. "Conclusions"). Methods of continual assessment and evaluation of services are key to conducting a successful study. Quantitative and qualitative measures as part of a mixed-methods approach to assessment allow for both an in-depth look at research data as well as provide an avenue for generalizations. In the case of this capstone, quantitative data will provide a statistical analysis of the effectiveness of implemented best practices, and the qualitative assessments will allow for generalization of input from a smaller cross-section of responses to the larger institutional population.

**Summary**

History has shown that virtual reference services have changed dramatically since their inception. Best practices in both the library and commercial worlds are customer-centric and aim to provide implementers of virtual reference services with a well-defined set of standards for quality interactions. However, it is important to remember that establishing best practices is not a do-and-done process. Continual evaluation and implementation of improved standards are key to staying abreast of the ever-changing nature of virtual reference.

In chapter three, I will take the suggestions found in the literature and use them to build a best practices document for an academic library's virtual reference service. The ultimate goal is to test these best practices in a live institutional setting and answer the question: *what are today's best practices in online reference, and how can librarians at academic institutions improve the student experience in online reference transactions?*

**CHAPTER THREE**

**Methods**

The literature review in chapter two identified the roots of virtual reference, best practices identified by both libraries and commercial institutions, and evaluational methods and challenges for the assessment of virtual reference transactions. The literature specifically called out certain approaches to the creation of best practices and the most effective methodologies for assessing virtual reference transactions. The goal of this capstone was to test newly revised best practices in a live institutional setting and answer the question: *what are today's best practices in online reference, and how can librarians at academic institutions improve the student experience in online reference transactions?* This chapter describes the research method and specific design used to assess the implementation of a comprehensive best practices document. An in-depth look at the setting and subjects of the research has been provided, as well as the methods of data collection and analysis.

**Research Paradigm and Design**

A mixed methods approach was chosen for the richness of the data that can be gleaned through qualitative measures and the measurability of quantitative data (Creswell, 2014). Existing literature supports the use of mixed methods research; Kuruppu (2007) did an appraisal of methods when it came to evaluation of reference transactions and concluded that a mixture of qualitative and quantitative measures should be used in a complementary fashion and that libraries should not rely on a single research methodology. By integrating the two forms of data (qualitative and quantitative), a more

complete and comprehensive understanding of my research problem was uncovered. The use of this paradigm allowed for a more thorough assessment of the effectiveness of the revised best practice standards. The convergent parallel design of the mixed methods approach allowed for a better understanding of the data collected. Creswell (2014) described the convergent parallel design as an approach where:

> ...a researcher collects both quantitative and qualitative data, analyzes them separately, and then compares the results to see if the findings confirm or disconfirm each other. The key assumption… is that both qualitative and quantitative data provide different types of information- often detailed views of participants qualitatively and scores on instruments quantitatively- and together they yield results that should be the same. (p. 219)

Thus, comparison of earlier research data with gathered quantitative data, and utilization of qualitative survey responses elicited from certain students, I was able to gain both an in-depth perspective of my research and provide generalizations to the larger student population.

**Setting and Subjects**

Research was conducted at an associate's and bachelor's degree-granting institution based in the Upper Midwest, which offers degree programs in Accounting, Business Management, Criminal Justice, and other areas, including the Health Sciences. This institution served approximately 14,000 students in a primarily online educational environment. All classes offered at the school had an online component, and the majority of the curricula required the use of the online library in some form. The student body as a

whole represented a diverse population, with ages ranging from late teens to mid-sixties with the majority of students falling in 25-45 age range. The student body was comprised of approximately a 3:1 female to male ratio, and about 60 percent identified as Caucasian, 10 percent as black or African American, 3 percent as Asian, 3 percent as Hispanic, and 24 percent opted not to answer the demographic question.

Survey participants included institutional tutors and peer-leaders who interact daily with the general student population. These participants provided a similar demographic range to the entire student population, and thus the qualitative data gleaned from this cross section could be generalized. A second survey was sent to six librarians employed by the institution. All of the librarians have at least 5 years of library experience, with four having 10 plus years, and one with more than 20 years. All the librarians surveyed were Caucasian females falling in the early 30s to mid-50s age range.

Quantitative results were taken from all students who used the library chat (virtual reference) service and who opted to rate their transactions with the librarian they interacted with. Qualitative comments were also gathered in an addition opt-in portion of the rating survey. Details about the collection methods and analysis are provided in the next sections.

**Data Collection**

To begin, two best practices documents were created in May 2016 based on the literature review and early survey data. Using an extant institutional guidelines document created in 2013 as a template, the two resulting documents provided complementary instructions about expectations for chat reference. The first document was internally

distributed in June 2016 to the librarians at my institution and detailed how to provide an optimal virtual reference experience for students (see Appendix A). Guidelines for interacting with a range of transactions (from easily answered general questions, to frustrated/pushy students, to students who just want the librarian to do their homework for them) were included in this first document. The second document was made public to all students and users of the chat (virtual reference) service starting in July 2016 (see Appendix B). This document provided guidelines regarding expectations for users, specifically, how students should behave in the chat environment as well as what services they could reasonably expect the librarians to assist them with. A short list of services not provided (such as technical help or questions about non-research services [e.g. financial aid]) were also present in this second document.

**Chat transaction data.** Once both documents were in place, data was gathered from the built-in Likert rating scale (quantitative) and optional commentary (qualitative) data. This data was collected using an opt-in tool that was offered at the end of each online transaction, and provided to all students who utilized the chat service (see Figure 1). Collection of this data took place over the course of an entire quarter (July-September 2016), as the institution runs classes on a quarterly basis and a full session of classes provided a more comprehensive
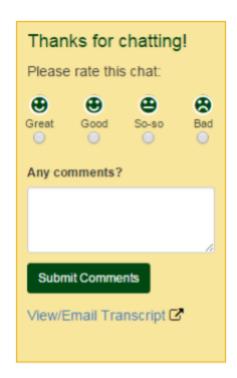


*Figure 1.* Chat Transaction Data Collection Tool. This is the view users see after a chat session has ended.

section of data than a few weeks would have. Data has been collected using this same

method since the inception of the virtual chat service in 2013, and thus comparisons of

the data collected within the research time frame were made to previously extant ratings

and commentary.

**Tutor and peer-leader survey.** In early October 2016, after a full quarter of chat

data collection partnered with the use of the best practices documents, a survey was sent

out to all institutional tutors and peer leaders asking about their knowledge of, familiarity

with, and opinions about the new best practices documentation. This survey, administered

via email containing a link to an anonymous SurveyMonkey, only encompassed the tutor

and peer leaders' knowledge and understanding of the second best practices document

that detailed the expectations and services that were and were not provided. This

qualitative data provided a measure of student awareness of the implemented

expectations and a generalization to the awareness of all students who were exposed to

the document and used the chat service.

**Institutional librarian survey.** At the same time the survey to tutors and peer

leaders was distributed, a similar survey was administered to the seven institutional

librarians who implemented the practices and could thus speak to the effectiveness of

both best practices documents. This second survey was administered via a link to a

SurveyMonkey via an email from the researcher. The librarians' survey assessed the

perceived effectiveness of the implemented practices and requested suggestions for

improvement in future iterations of the practices. The responses from the librarians

provided a look at the staff's perceptions of the improvement in reference services since the implementation of the best practices documentation.

**Data Analysis**

  **Chat transaction data.** All the data collected as part of the chat transactions were transferred into a built-in analytics system. A breakdown of the number of students who chatted, rated chat, left comments, and examination of the comments left after transactions were collected and then gathered from the chat service analytics. Trends in positive and negative comments in relation to Likert-scale ratings, topics of conversation, and adherence to the best practices were measured. This data provided a comparison of the students' self-reported experience with online chat before and after the implementation of virtual reference best practices.

  **Survey data.** Analysis of each of the surveys on SurveyMonkey was done using built in analytics tools, and textual coding and interpretation was conducted by the researcher for qualitative questions. The tutor and peer-leader survey responses were taken in context of each question asked. Generalizations to the entire student population were made where appropriate, and the qualitative data acquired helped inform the assessment of the new practices documentation from the student perspective. The institutional librarian survey was codified using a mixture of pre-set and emergent codes. This codified information helped provide a deeper qualitative look at the best practices that were implemented and how they might be improved upon in the future.

**Human Subjects Committee**

Before any research was conducted, all survey questions, consent forms, and data collection tools were submitted to the Hamline Human Subjects Committee (HSC) for review. The HSC evaluated the processes for data collection to ensure that adequate procedures were followed for informed consent and to preserve the confidentiality of the study subjects. No data pertaining to the research outcomes was collected or developed before receiving final approval from the Committee.

**Review**

This chapter explained how the research was done in the convergent-parallel design of a mixed-methods approach and why this approach was the best way to assess the data collected. A thorough look was taken at the intended location, subjects, and outcomes of the study. An overview of the timeline and collection procedures for the data was explored, and parallels were drawn to other similar studies that have been done in the field. Chapter four will provide a report of the results collected, an analysis of the data, and an interpretation of the results. Concepts introduced in chapter two will re-emerge in the interpretation of results.

**CHAPTER FOUR**

**Results**

The methods and research design described in chapter three laid out the foundation for research. Using a mixed methods approach provided a more complete and comprehensive understanding of the data gathered, and convergent parallel examination of the research results allowed an in-depth perspective of the virtual reference data as well as provided generalizations to the larger student population. The goal of this research was to gather data about the use and implementation of best practices in an academic library's virtual reference environment in order to answer the question: *what are today's best practices in online reference, and how can librarians at academic institutions improve the student experience in online reference transactions?* This chapter explains the results of the research conducted and analyzes the impact of those data.

**Review of Research**

Research was conducted at an associate's and bachelor's degree-granting institution based in the Upper Midwest, which offers degree programs in Accounting, Business Management, Criminal Justice, and other areas, including the Health Sciences. This institution served approximately 14,000 students in a primarily online educational environment. All classes offered at the school had an online component, and the majority of the curricula required the use of the online library in some form.

Two best practices documents were created and provided complementary instructions about expectations for chat reference. The first document was internally distributed in June 2016 to the librarians at the institution and detailed how to provide an

optimal virtual reference experience for students

(see Appendix A). The second document (see

Appendix B) was made public to all students and

users of the chat service starting in July 2016.

Based on feedback from an informal survey the

expectations document was made available via a

link both within the chat environment once a user

started a session and under the posted hours of

operation for access before a session started (see

Figure 2). This second document specifically

provided guidelines about how students should

behave in the chat environment as well as with

what services they could reasonably expect

librarians to assist them.



**Chat Hours**

| Monday-Thursday | 10am-4pm: 5pm-9pm CT |
|---|---|
| Friday | 10am-4pm CT |
| Saturday | 11am-3pm CT |
| Sunday | 5pm-9pm CT |

Chat Expectations and Guidelines

*Figure 2.* Student expectations document link. This is the view users see at the beginning of each chat session.

Data was collected for one term (3 months; July-September 2016), as the institution runs classes on a quarterly basis. Quantitative data about the number of virtual reference transactions, student ratings of their chat experience (using a Likert rating scale of 1 to 4), and comments was collected. Qualitative data included comments from students who used the library chat and survey results. Survey participants included institutional tutors and peer-leaders who provided a measure of student awareness about the implemented best practices and the clarity of the

expectations for students who used the library chat. Additional survey respondents included librarians employed by the institution. This second survey of librarians sought to determine the perceived effectiveness of the implemented practices and the quality of interactions with students in the virtual reference environment.

**Chat Transaction Data**

All the data collected as part of the chat transactions were transferred into a built-in analytics system. A breakdown of the number of users who chatted, rated chat, left comments, and examination of the comments left after transactions were collected and then gathered from the chat service analytics. Trends in positive and negative comments in relation to Likert-scale ratings and adherence to the best practices were measured. This data provided a comparison of the students' self-reported experience with online chat for the 12 weeks preceding (April-June 2016) and 12 weeks after (July-September 2016) the implementation of virtual reference best practices.

**Likert scale ratings.** During the July through September data collection period a total of 1,403 virtual reference transactions (chats) took place. Of those transactions, 279 participants (19.9%) chose to rate their experience. Table 2 provides the percentage breakdown of each Likert scale category measuring satisfaction in the chat service provided. The overall average rating for this time period was 3.65 on a 4-point scale. This was a 0.02 drop from the average rating during the 12 weeks preceding the data collection.

Table 2.
*Likert rating scale results (July-September 2016)*

| Rating (1-4) | Chat Count | Percent of Total Chats |
|---|---|---|
| 1 (Bad) | 10 | 0.7 |
| 2 (So-so) | 13 | 0.9 |
| 3 (Good) | 43 | 3.1 |
| 4 (Great) | 213 | 15.2 |
| Unrated | 1124 | 80.1 |

An analysis of the transcripts (the actual conversations between the student and librarian) for the ten lowest rated transactions (rating of 1 on Likert scale) indicated that 40% of the participants rated their experience negatively because they were unhappy with the answers they were provided. One participant (10%) encountered a language barrier and had a hard time understanding the answer that was provided, and for 50% of the transactions there was no clear indication of why the participants rated their experience low. For the time period preceding the implementation of the best practices document, the results of the lowest ratings were very similar: 50% of participants were unhappy with the answer they provided, 10% had a hard time understanding the answer they were provided, and 40% had no clear indication of the reason for the low rating (because they left no comment to accompany their rating).

**Student comments.** Overwhelmingly, the comments that students left were directly tied to their satisfaction or dissatisfaction with their virtual reference experience. There were a few comments that had no bearing on satisfaction but instead were follow up questions or search queries that were input into the comment box by mistake; these

comments were codified as being neutral. Comments were considered to be positive

based on the use of words and phrases such as "awesome," "very helpful," "good,"

"useful," and "thank you." Conversely, comments were considered negative if they

contained words and phrases like "disappointing," "no resolution," "not acceptable,"

"rude," and "unhelpful." Table 3 breaks down the number of chats, average rating, total

number of optional comments, and number of positive, negative, and neutral comments

by time period (where Spring is before and Summer is after the implementation of the

new best practices).

Table 3.
*Chat comment comparison (April-June to July-September 2016)*

|  | Spring (April-June) 2016 | Summer (July-September) 2016 |
|---|---|---|
| Number of Chats | 1472 | 1403 |
| Average Rating | 3.67 | 3.65 |
| Total Number of Optional Comments | 85 | 76 |
| Number of Positive Comments | 73 | 68 |
| Number of Negative Comments | 5 | 4 |
| Number of Neutral Comments | 7 | 4 |

Before the best practices were put into place 85.9% of the comments were

positive, 5.9% were negative, and 8.2% were neutral. After the best practices were

implemented, user comments became slightly more positive in nature with 89.5%

including positive language, 5.25% including negative language, and 5.25% codified as

neutral. Positive comments ranged from simple, "Very helpful!" and "Thanks!" to more

in-depth notes such as, "Thank you for helping me access the required resources and recommending additional references to help ensure accurate project completion" and "[The librarian] was well informed and a pleasure to speak to. She provided me with necessary information regarding my issue." Overall, users who rated their experience as being positive were less likely to provide optional comments - but when they did, were more likely to be verbose about their experience. Users who rated their experience as being negative were more likely to provide comments, and these comments were typically short, containing single words such as, "rude" and "unhelpful," occasionally including profanity, and much less often had long-winded explanations of why the student reached out and how the library was not as helpful as technical support.

**Survey Data**

Analysis of each of two surveys conducted through SurveyMonkey was done using built in analytics tools, and textual coding and interpretation was conducted by the researcher for qualitative questions. The tutor and peer-leader survey responses were taken in context of each question asked. Generalizations to the entire student population were made where appropriate, and the qualitative data acquired helped inform the assessment of the new practices documentation from the student perspective. The institutional librarian survey was codified using a mixture of pre-set and emergent codes. This codified information helped provide a deeper qualitative look at the best practices that were implemented and how they might be improved upon in the future.

**Tutor and peer-leader survey.** In early October 2016, after a full quarter (one full cycle of class sessions) of data collection partnered with the use of the best practices

documents, a survey was sent out to all institutional tutors and peer leaders asking about

their knowledge of, familiarity with, and opinions about the new best practices

documentation (see Appendix C). These students were selected because of their work

with the general student population. Eighteen tutors/peer leaders (out of approximately

50) participated in the survey. While this sample of students was not as large as hoped

for, it was enough to obtain helpful feedback about institutional virtual reference services.

On a scale of 1 to 4, with one being not familiar at all and 4 being very familiar,

83% of the respondents indicated that they were "somewhat" to "very familiar" with the

chat service, 11% indicated that they were aware that the service existed but had never

personally used it, and 6% indicated that they were not familiar with the chat service at

all or had never used it. Of the respondents who had used the chat service, 100% were

either satisfied or very satisfied with their experience. This high satisfaction rate is mostly

in alignment with the familiarity rating scale numbers, but through the comments about

why the tutors/peer-leaders had or had not referred other students to the service clarified

that there was a bias towards the perceived helpfulness of the library chat.

Seventy-two percent of respondents had referred another student to the library

chat service, and of those that had, all of them indicated that they felt that the service was

a helpful resource when they had a question. Specific comments regarding the usefulness

of the service included:

- "I feel like the service is very helpful and the librarians are very

  knowledgeable about the material."

- "The online library can be difficult to navigate. It is helpful to have someone more knowledgeable about the layout direct you where you need to be."

- "Students have questions about resources that I may not have the complete time to assist during tutoring, so I direct them to the library chat service for additional help."

- "I am a tutor and use [the chat service] all the time. I encourage other students to use it too. It is so helpful; don't know what we would do without it."

To gauge awareness of the new best practices, tutors/peer-leaders were asked if their institution provided a best practices document (described as: "a document outlining what their chat service will and will not help with when it comes to research and homework assistance."), 38.9% responded "yes," and 61.1% responded that they did not know. After viewing the established best practices documentation (see Appendix B), respondents were asked if the expectations outlined were clear and understandable: 94.4% said the documentation was clear, and 5.6% (one respondent) indicated that the expectations were not clear or understandable. When asked for additional comments about their experiences with virtual reference and the best practices documentation, 78% indicated that they thought the service was fine the way it was.

**Institutional librarian survey.** The librarians' survey assessed the perceived effectiveness of the implemented practices and requested suggestions for improvement in future iterations of the practices (see Appendix D). Six out of six librarians responded to

the survey for a 100% response rate. All six respondents indicated that they staffed the

virtual reference (library chat) service between 8 and 12 hours a week, which provided a

good basis for their feedback regarding their experience with the practices. When asked if

they had noticed any differences in the number of students who used library chat since

the implementation of the best practices documents, 66.7% indicated they did not not

notice any difference and 33.3% responded that the number of students they usually serve

decreased. This ratio held true when the librarians were asked if they had noticed any

differences in the quality of their interactions of students: 66.7% said no, and 33.3% said

yes. Of the two respondents who indicated that they had noticed a difference in the

quality of their interactions, specific callouts were made to the nature of the questions

being asked by students: "questions are more library and learning services related" and

"did not receive as many tech support or etextbook questions." This spoke to the

possibility that users of the service better understood that library chat was for research

questions and not just a general help feature.

    The next set of questions got to the heart of how the librarians at the institution

felt about the efficacy of the new best practices. On a scale of 1 to 4 (with 1 being

"adversely effective" and 4 being "very effective") 83.4% of respondents rated the new

policy and expectations documents as "somewhat" or "very effective" in comparison

with the previous documentation, and 16.6% rated the new documents as "not

effective/has neither improved or diminished virtual reference services." Table 4 shows

the number of responses to experiential improvement questions from the survey. While

the majority of the librarians (83.3%) felt that the addition of best practices

documentation had improved their overall experience in library chat, half of the

respondents were not sure that the documents had improved the experience for students.

In fact, 33.3% of the responding librarians indicated they did not think that the best

practices had improved overall student experience, and only one respondent (16.6%) felt

that the experience did improve for students.

Table 4.
*Librarian survey responses: Experience improvement*

| Question | Response | | |
|---|---|---|---|
| | Yes | No | I don't know |
| Has the addition of the best practices document improved your overall experience with the library's online chat service? | 5 | 1 | 0 |
| In your opinion, has the addition of the best practices documents improved the students' overall experience with the library's online chat service? | 1 | 2 | 3 |

Specific feedback regarding possible improvements that the librarians would like

to see made for future iterations of the best practices documents was then elicited. One

respondent indicated they felt:

"the best practices have brought the librarians more on the same page in some

ways. In an ideal world, everyone would follow them [the practices] to the letter,

but as we all know, every chat interaction is different and requires the use of

judgment."

Another respondent said, "overall, I do think having the best practices listed has

contributed to improvement in the quality of questions we receive in chat." These

comments were in line with the positive responses about the librarian's improved

experience with virtual reference since the implementation of the best practices.

**Analysis of Results**

   **Chat transaction data.** Based on the virtual reference data itself, there was not a

significant difference in the chat ratings from the time before and after the best practices

documents were introduced. There was a 0.02 point drop overall in the average chat

rating which is statistically insignificant. Both pre- and post-implementation, only ten

users rated their experience as "Bad" and of those users there was not a significant

variance in why their experience was bad (see Table 5).

Table 5.
*Pre- and Post-implementation "Bad" experience reason breakdown*

|  | Pre-implementation | Post-implementation |
|---|---|---|
| Unhappy with answer | 5 | 4 |
| Did not understand answer | 1 | 1 |
| No indication of why | 4 | 5 |

   The comments left by users painted a faintly better picture than the numerical data

that was collected. There was a slight increase in positive comments (3.6%) after the

enactment of the best practices, a negligible drop of negative comments (by 0.65%), and

a small decrease in the number of neutral comments (2.95%). The decrease in negative

and neutral comments and the increase in the number of positive comments were not

considerable but were notable.

   **Survey data.** The tutor/peer-leader survey results indicated an unprecedented

100% satisfaction rate with the library chat (virtual reference service) for those that had

used it. This satisfaction rate did not track with the quantitative results gathered over the course of the study. This disconnect may have been due to the fact that tutors/peer-leaders go through rigorous training before they are allowed to mentor other students - and thus have a higher familiarity with the resources available to them (which includes the library chat). So while some of the responses from the survey respondents could be generalized to the student population as a whole (for example, the awareness of the existence of best practice documents), the overall satisfaction with virtual reference services was not one of them. After the best practices document was put into place only 38.9% of the survey respondents were aware that it was available. Due to the low awareness amongst tutors and peer-leaders, it is likely that there was also a low rate of awareness among the general student population in regards to the practices documents. One respondent suggested that the "Chat with a Librarian service should be made available in more places" and that a description of what it is for should be made more apparent. However, 94.4% of the students surveyed rated the clarity of the documentation highly when asked if the expectations outlined were clear and understandable, which indicated that reviewing and including recommendations from the literature was effective in the document creation.

Results from the institutional librarian survey were mixed. Two-thirds of the librarians surveyed indicated that they did not notice any differences in the quality of their interactions with students, and half of the respondents were not sure that the documents had improved the experience for students. However, a majority of the respondents indicated that the best practices had improved their personal experience in

the virtual reference environment. Which, again, speaks to the clarity and helpfulness of the documentation and the integration of lessons learned from the literature review.

**Summary**

Analysis of the results from the chat transaction data and the two surveys does not present a clear answer to my research question, however they do provide some context for understanding the implications of the data. The student experience after the implementation of the new best practices documents neither significantly improved or deteriorated which could be due to the low awareness amongst students of the new documentation. The experience among the institutional librarians did improve slightly, however feedback indicated there was room for improvement. Chapter five will reflect more on the implications of the data collected and make recommendations for next steps.

**CHAPTER FIVE**

**Conclusions**

After building a best practices document for an academic library's virtual

reference service and testing those best practices in a live institutional setting, I was able

to answer the question *what are today's best practices in online reference, and how can*

*librarians at academic institutions improve the student experience in online reference*

*transactions?* The results of the research described in chapter four are revisited in this

chapter and are discussed along with the limitations and implications for future research.

Reflections on the process of researching, writing, and learning will also be discussed at

length. I revisited the literature review from chapter two and describe how the major

findings connected to the outcomes of my research.

**Major Findings**

Three major findings resulted from my research: a lack of awareness amongst

students of the new best practices, the benefit of documentation for the librarians, and the

need for defining best practices.

**Awareness.** The analysis of the results suggest that the majority of students who

utilized the library chat were unaware of the new best practices documents. Of the

students surveyed only 38.9% indicated they knew their institution provided a best

practices document. This awareness rate was probably even lower among the general

student population as indicated by the consistency of the chat ratings from the time period

before the implementation of best practice documents. As further evidence, even the

institutional librarians noticed the lack of awareness: half of the respondents were not

sure that the documents had improved the experience for students. In fact, 33.3% of the responding librarians indicated they did not think that the best practices had improved overall student experience. However, for those students who were aware of the addition of the best practices, results suggest that the best practices created for the purpose of this study were clear, understandable, and beneficial to the learning environment for which they were drafted. In fact, all but one of the students surveyed (94.4%) indicated that they found the documentation to be understandable, and 61.1% of those same respondents said the addition of the best practices document improved their experience with online chat.

**Benefit of documentation.** The institutional librarians benefitted from having documentation put in place which provided basic competencies for them to demonstrate within the virtual reference environment. The majority of the librarians surveyed (83.3%) felt that the addition of the best practices documents had improved their overall experience in library chat. Feedback about the practices painted a positive picture overall. One respondent said, "the best practices have brought the librarians more on the same page in some ways," and another indicated, "I do think having the best practices listed has contributed to improvement in the quality of questions we receive in chat." The adoption of a competency structure was seen as helpful and a good foundation for improved experiences for both students and librarians in the library chat environment.

**Defining best practices.** My results were very enlightening; the impact of my research was felt by librarians and to a lesser extent by students. The need for defining best practices for online transactions exists. Outlining basic skills and defining what those skills entailed provided a structure for online chat. This competency structure provided a

platform for the librarians to use to evaluate their own performance. While guidelines and virtual reference competencies exist in library literature, well-defined and structured best practices filled a gap in defining basic performance levels.

**Connections to the Literature Review**

Lankes (2004) suggested that establishing best practices within virtual reference services is advantageous to librarians who want to foster the links between research and practice. As I reflected on the research question I set out to investigate, I found that there is not one simple answer that can be drawn from the results that were gathered. Research is a multi-faceted process, and though I did not really expect a cut-and-dry final answer to my question, I was hoping for a little less ambiguity in the results. I was expecting a slightly more pronounced increase in my quantitative data - the virtual reference ratings and positive comments from students - instead, my findings stayed pretty consistent with the results from the time period before the implementation of best practice documents. The breadth of my quantitative data ended up providing me with less insight than the depth of my qualitative data. I chose a mixed-methods approach to this study specifically for the richness of information that could be gleaned from both types of data, and my results demonstrate that quality.

Following the guidelines set out by ALA-RUSA, and incorporating some of the lessons learned from Ward and Barbier's 2010 study, specifically their highlighting of the need for basic competencies of the librarians who conduct online transactions, I focused on the creation of competency areas for the internal best practices document. I concluded similarly to Logan and Lewis (2011) that successful reference transactions "were more

than just mastering procedures, and that accuracy, tone, good grammar, authoritative

sources, and a proper reference interview were also important components" of a good

online chat (p. 222). In addition to the internal document, a student-facing document was

created to provide students with a clear explanation of what they could expect from

librarians in terms of help topics, and in return what was expected from the student in

terms of behavior and conduct. Recommendations from Jones (2014), McLean-Conner

(2015), and Stormont (2010) regarding customer service, communication, and

institutional practices provided a basis for this second document. While the documents

that resulted from the literature review were thorough, analysis of the quantitative data

and the conclusions drawn from the tutor-peer-leader survey revealed that further steps

needed to be taken to ensure that users of the virtual reference service were aware of the

documentation and could more easily access it.

**Limitations**

Two major limitations were uncovered during the research process: lack of

student awareness of the documentation impeded the best practices efficacy in chat, and

additional analysis of the chat transcripts may have provided a deeper understanding of

the use of chat and the resulting quantitative ratings.

**Awareness of documentation.** In regards to the existence of best practice

documents, the low awareness rate amongst tutors and peer-leaders indicated that it was

likely there was also a low rate of awareness among the general student population. This

low awareness rate could account for some of the lower quantitative ratings and negative

comments. The way that the best practices were presented to students was very similar to

that of a "terms of service" document. Clicking a link to read a document outlining best practices and expectations for a library chat service may not have been the best presentation of the material. Students who needed immediate help and thus used the online chat service were probably not the students who would take extra time and extra steps to read through a document that detailed what sort of assistance they could expect. So while the librarians at the institution had read and were aware that the student-facing document was available, students were less likely to be aware of, much less take the time to read, the best practices.

**Additional analysis.** The sheer volume of quantitative data was overwhelming. With the help of the built-in analytic tools the data became much more manageable. I was able to draw out the most relevant data with the help of the Likert scale and comment fields. However, a more in-depth analysis of the chat transcripts may have provided me with a deeper understanding of the way that students used and rated their virtual reference experience. As Kern (2006) pointed out, "There is a ridiculous amount of information that could be mined. It is important to look at the transcripts as the last step of the research design rather than the first; you should know what questions you want to answer before you jump into the transactions as a data source" (p. 102). Spending time to closely examine and analyze chat transcripts - in addition to than the ones from the users who rated their experience the lowest - might have provided richer qualitative data. However, making sure that this data is assessed after the quantitative results would provide a better understanding of the "why" behind the numbers.

**Implications**

The limitations of my study provided insight into possible implications for follow up: availability and tutorials. Availability and frequency of the best practices documents and the chat widget itself would lend to the awareness of the documentation, and the creation of tutorials would aid in creating a deeper understanding of the practices and use of online chat.

**Availability.** One quarter (12 weeks) may not have been long enough for students to notice the changes implemented. Conducting an additional study a year from now will hopefully show an increased awareness among students of the best practices, and provide my institution with a richer set of data. This larger span of time would also allow the effectiveness of the documentation to play out both on the student and staff sides of the chat experience.

One respondent to the tutor/peer-leader survey suggested that the "Chat with a Librarian service should be made available in more places" and that a description of what it is for should be made more apparent. The chat box (widget) is currently available in a multitude of places: the online research guides, embedded in several of the most used databases, and in the resources tab of students' online classes. However, embedding the widget in the lessons or assignments components of online classes, getting it into more of the databases, and perhaps even enabling a pop-up feature so the box becomes more visible would increase the availability and accessibility of online chat.

**Tutorials.** In terms of the best practices documents, the creation of a video or interactive tutorial might help students understand what the service is for and show how

they can use it to their best advantage. This tutorial could then be embedded in the "getting started" or homepage of every online class. The library staff could provide the tutorial to faculty for their awareness, and so that they can link to it in class announcements for their students.

**Next Steps and Recommendations**

Going into this study, I knew that my work would not end with the gathering of results. Conducting this research was merely a first step to gain some insight into student experiences with online chat, and the next step will be to use that insight to drive further improvements. "Providing effective, high quality user-centered reference services depend on in-depth understanding of deficiencies inherent in the services, which can be achieved only by critically evaluating the reference services that libraries provide" (Kuruppu, 2007, para. "Conclusions").

Now that best practices have been implemented at my institution, ongoing assessment of student experiences will help drive improvements. To start, making sure that the student-facing document is more prominent on the library website, in the chat box, and in library tutorials will hopefully enable student awareness of what they could expect from librarians in terms of help topics, and in return what was expected from them in terms of conduct. Revamping the chat box to make it more dynamic (including adding a pop-up feature) may increase positive student experiences, and we could also explore options to increase the hours that services are available to students.

Garnering input and insight from the librarians will also be crucial to the improvement of virtual reference services. In the institutional librarian survey, one

librarian said that they felt the next step for the service would be to "utilize a more robust

chat service that allows us [librarians] to work with students in a more meaningful way -

perhaps via screenshare or webcams and microphones." The literature concurs with the

idea of a more robust service, the "live chat representative needs to be familiar with the

multiple channels of customer-services support and delivery and be able to provide

answers to the customer in the quickest way possible" (Jones, 2014, p. 18). Using

screenshare and VoIP features would allow librarians to show and answer students'

how-to questions more quickly.

   **Future research.** Other researchers may want to do additional study on the hours

of service their institution offers, and the efficacy of partnering with other institutions to

provide 24-hour reference services to students. Future research could explore the impact

of a more robust support system (one that includes screenshare and VoIP capabilities) in

comparison to a completely text-based chat. In terms of student success, a longitudinal

study could provide an in-depth comparison of the educational successes of students who

utilize library support services and students who do not. Research questions rarely end

with a simple answer and often leave the researcher with more questions to pursue.

   **Using the results.** The results of this study will be used in several ways. First,

findings will be presented to the institutional librarians and discussed. In a year or so, a

similar study will be conducted and further conclusions about the efficacy of the

implemented best practices can then be drawn. Trends that emerge from the follow-up

study in comparison to these results will help the institution assess practices and drive

any changes that may need to be made. Additionally, these results will be submitted for

presentation at a national library or online learning conference. Dissemination of the findings could help guide other institutional librarians who are exploring best practices implementation and assessment.

**Conclusion**

"As one of the purposes of reflection is to improve practice, we need to look forward as well as back" (Forrest, 2008, p. 230). Establishing best practices is not a do-and-done process. Continual evaluation and implementation of improved standards are key to staying abreast of the ever-changing nature of virtual reference. There is no simple answer to the question: *what are today's best practices in online reference, and how can librarians at academic institutions improve the student experience in online reference transactions?* Best practices in online reference will differ from institution to institution, but outlining competencies to be demonstrated by librarians, and setting limitations on what students can expect from their reference experience is a good place to start.

**REFERENCES**

American Library Association. (2014, April 14). State of America's libraries report 2014.

Retrieved from Academic Libraries website:

http://www.ala.org/news/state-americas-libraries-report-2014/academic-libraries

American Library Association Reference and User Services Association. (2010, March).

*Guidelines for implementing and maintaining virtual reference services* (MARS

Digital Reference Guidelines Ad Hoc Committee, Author). Retrieved from

http://www.ala.org/rusa/sites/ala.org.rusa/files/content/resources/guidelines/virtua

l-reference-se.pdf

American Library Association Reference and User Services Association. (2013, May).

*Guidelines for behavioral performance of reference and information service*

*providers* (RASD Ad Hoc Committee, Author). Retrieved from

http://www.ala.org/rusa/resources/guidelines/guidelinesbehavioral

Columbia University. (1857). Statement of the librarian. In *Statements, opinions, and*

*testimony taken by the committee of inquiry appointed by the trustees of Columbia*

*College* (pp. 1-11). New York, NY: John W. Amerman.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods*

*approaches* (4th ed.) [Kindle iPad version].

Elmorshidy, A. (2013). Applying the technology acceptance model and the service

quality model to the new live customer support chat in e-commerce websites.

*Journal of Applied Business Research*, *29*(2), 589-596.

http://dx.doi.org/10.19030/jabr.v29i2.7659

Forrest, M. E. S. (2008). Learning and teaching in action: On becoming a critically

    reflective practitioner. *Health Information and Libraries Journal*, *25*(3), 229-232.

Jones, J. (2014, October). Live chat: Helps win customer loyalty. *Sales & Service*

    *Excellence Essentials*, *13*(10), 18.

Kern, M. K. (2006). Looking at the bigger picture: An integrated approach to evaluation

    of chat reference services. *The Reference Librarian*, *46*(95/96), 99-112.

    http://dx.doi.org/10.1300/J120v46n95_07

Klimczak, S. (n.d.). Online customer service best practices. Retrieved March 10, 2016,

    from

    https://www.livechatinc.com/livechat-resources/online-customer-service-best-pra

    ctices/

Kuruppu, P. U. (2007). Evaluation of reference services - A review. *The Journal of*

    *Academic Librarianship*, *33*(3), 368-381.

    http://dx.doi.org/10.1016/j.acalib.2007.01.013

Lankes, D. R., Gross, M., & McClure, C. R. (2003). Cost, statistics, measures, and

    standards for digital reference services: A preliminary view. *Library Trends*,

    *51*(3), 401-413.

Lankes, R. D. (Ed.). (2004). *The Virtual Reference Desk: The virtual reference*

    *experience: Integrating theory into practice*. New York, NY: Neal-Schuman.

Logan, F. F., & Lewis, K. (2011). Quality control: A necessary good for improving

    service. *The Reference Librarian*, *52*(3), 218-230.

    http://dx.doi.org/10.1080/02763877.2011.557314

Matteson, M. L., Salamon, J., & Brewster, L. (2011). A systematic review of research on

    live chat service. *Reference & User Services Quarterly*, *51*(2), 172-190.

McLean-Conner, P. (2015). Live chat best practices. *Electric Light & Power*, *93*(3), 6.

Nilsen, K., & Ross, C. S. (2006). Evaluating virtual reference from the users' perspective.

    *The Reference Librarian*, *46*(95-96), 53-79.

    http://dx.doi.org/10.1300/J120v46n95_05

Reference and User Services Association. (2008, January 14). Definitions of reference.

    Retrieved from http://www.ala.org/rusa/resources/guidelines/definitionsreference

Shaw, K., & Spink, A. (2009). University library virtual reference services: Best practices

    and continuous improvement. *Australian Academic and Research Libraries*,

    *40*(3), 192-205.

Singer, C. A. (2010). Ready reference collections: A history. *Reference & User Services

    Quarterly*, *49*(3), 253-264.

Springshare (Ed.). (n.d.a). LibAnswers with LibChat. Retrieved from

    http://www.springshare.com/libanswers/

Springshare (Ed.). (n.d.b). Web Software for Libraries and Educational Institutions.

    Retrieved from http://www.springshare.com/

Stormont, S. (2010). Becoming embedded: Incorporating instant messaging and the

    ongoing evolution of a virtual reference service. *Public Services Quarterly*, *6*(4),

    343.

Tenopir, C., & Neufang, R. (1995). Electronic reference options: Tracking the changes.

    *Online*, *19*(4), 67-73.

Van Duinkerken, W., MacDonald, K. I., & Stephens, J. (2009). The chat reference

interview: Seeking evidence based on RUSA's guidelines. *New Library World*,

*110*(3), 107-121. http://dx.doi.org/10.1108/03074800910941310

Ward, J., & Barbier, P. (2010). Best practices in chat reference used by Florida's Ask a

Librarian virtual reference librarians. *Reference Librarian*, *51*(1), 53-68.

Appendix A

Internal Best Practices Document

In order to provide the best possible reference services to our students, this document

serves as a basic tool to facilitate quality interactions with students, faculty, and staff via

the "Ask-a-Librarian" chat service. Librarians will exhibit the following competencies:

- Ability to conduct an effective reference transaction, including the creation and

  use of "canned" messages;

- Online communication skills and etiquette for online communication;

- Understand availability and use of institutional and external resources;

- Ability to assist students in applying critical thinking and information literacy

  skills; and

- Ability to apply reference transaction policies in an online environment (e.g.,

  scope of service, time limits, harassment, etc.).


Competency Descriptions

**Ability to Conduct an Effective Reference Transaction**

Conducting effective online reference includes clarifying the student's

informational needs, identifying and delivering desired resources in a timely manner, and

confirming that the information provided answered their question. The use of "canned" or

pre-scripted messages can be used to facilitate conversation and provide access to

frequently asked question links. Librarians should understand the limitations of the chat

service and be able to recommend a student set up a research appointment or individual

tutoring session when the question being asked requires specific assignment/content knowledge and/or takes up more bandwidth (time, resources, attention) than is available in the online reference environment.

**Online Communication Skills and Etiquette for Online Communication**

Interpersonal skills are important when conducting online reference. Librarians should:

- Create a welcoming atmosphere by asking how they can help;

- Maintain word contact so that students know that librarians are paying attention or are still working on a problem (no more than two minutes should elapse without the librarian sending a message to each user, phrases such as "I am going to take a minute or two to see if I can locate…" or "I'm still working on your question" are good examples);

- Show interest in the student's question through chat tone and word choice;

- Use positive phrasing ("I can…," "I wish…" instead of "I can't/won't/don't");

- Use "canned" messages as appropriate or as needed;

- Use emoticons as appropriate or needed to engage and build rapport with the student; and

- Provide small amounts of information at a time - avoiding the use of long blocks of text.

**Understanding Availability and Use of Institutional and External Resources**

Students should be encouraged to access and use the same e-resources (databases, online guides, FAQs) that librarians utilize. Guidance should be provided or offered to students so that they can navigate and use the available resources *after* a chat session has ended. Providing links to the database list, a programmatic guide, or an answer in the FAQ database are encouraged.

**Ability to Assist Students in Applying Critical Thinking and Information Literacy Skills**

Librarians should provide context and instruction to students rather than just sharing a resource or linking to a web page. Provide enough guidance so that the student can recreate a search if needed. Merely providing links will not suffice.

Recommendations for search terms and subject headings can be provided, but it is preferential that the librarian prompts the student to come up with search terms on their own. Advising the use of Boolean operators or alternative examples of query constructions is encouraged. Additional information about evaluating resources for relevancy, authority, and timeliness should be supplied when possible.

**Ability to Apply Reference Transaction Policies in an Online Environment**

Regarding the scope of the "Ask-a-Librarian" service, librarians should avoid giving their personal opinions or making comments about the subject of a student's question. This does not include the small amount of self-disclosure that a librarian may choose to offer in order to build trust and rapport with a student.

Offering opinions on subject matter, topic selection, or assignment parameters is not appropriate. Offering information relating to the student's needs, questions, or research process is completely appropriate and expected.

Sessions should always be conducted and ended in a courteous manner. Students should never be told that they have asked their limit of questions or that their "time is up." If chat hours have ended, the librarian may offer to connect with the student via email or pass on their question to the appropriate subject librarian.

The anonymity of virtual reference service sometimes lends to inappropriate behavior. When dealing with rude/obscene students, inappropriate questions, and/or offensive or threatening language, the librarian should use a scripted message that is appropriate to the situation.

For additional information and specific procedural guidelines, please see the *Guidelines for Virtual Reference Transactions* document which is available in the internal Library Onboarding Guide.

Appendix B

Student Expectations Document

The mission of the Library is to cultivate life-long learners who are prepared to thrive in a diverse and digital society. In order to provide the best possible service, please keep the following guidelines in mind when using the "Ask-a-Librarian" chat service.

Expectations and Conduct

The chat service is intended only for students, faculty, and staff at the College.

Per the College's Conduct/Dismissal Policy, "Students are expected to conduct themselves with the same standards of behavior as are expected in the workplace and community." Please:

- Refrain from using harassing or obscene language.

- Refrain from spamming or posting inappropriate materials.

- Use emoticons only when appropriate or necessary.

- Hold yourself responsible for academic integrity and ethical behavior.

Services

The "Ask-a-Librarian" online chat service may provide help with the following:

- Identifying topics and sources for research;

- Guidance and information about elements of a research paper;

- APA formatting and citation guidelines; and

- Using the online library.

Services not provided include, but are not limited to:

- Paper review and in-depth writing help;

- Technical assistance relating to textbooks and computer problems; and

- Specific answers to homework assignments.

Appendix C

Tutor and Peer Leader Survey

**Consent Text**

This survey is being administered by Sara Stambaugh, a Hamline University Graduate Education student, as part of a research study to gather information about student perceptions of the online "chat with a librarian" service which is offered at your educational institution. Information gathered during this survey will be written up as public scholarship and will eventually be published in Hamline University's Bush Library Digital Commons, a searchable electronic repository, and it may be published or used in other ways. The information learned from this survey will help inform best practices and chat etiquette in an academic library setting, which in turn may change the way libraries approach virtual reference experiences and best practices for interacting with students/users.

You are being asked to complete this survey because you are a tutor and/or peer leader at your school and interact daily with the general student population. This survey consists of nine multiple-choice questions and two open-ended questions for you to provide your thoughts. The survey should take between 5 and 7 minutes to complete.

There is little to no risk for you if you choose to participate. Your responses are voluntary and will be kept confidential. Responses will not be identified by individual. All responses will be compiled and analyzed as a group for the purposes of this research.

This survey is being distributed with permission from the School of Education at Hamline University and from the Rasmussen College Institutional Review Board. You are free to complete this survey or not at your own discretion. If you have any concerns or questions about your rights as a participant or about the way the survey is being conducted, please contact:

Sara Stambaugh

Having read the above, I understand that by clicking the "Yes" button below, I agree to take part in this study. You may opt out of the survey at any time without any negative consequences by exiting your browser window.

- Yes - I agree to participate.
  - Selecting this option will take participants to survey questions.

- No -  I do not agree to participate

    o Selecting this option will take non-participants to a "Do Not Agree"
      Statement:

    Thank you. You have decided not to participate in this survey. No
    data has been collected from you.

**SurveyMonkey - Questions**

Question 1.

What degree level are you currently pursuing at your educational institution?

- Diploma/Certificate

- Associate's

- Bachelor's

Question 2.

How far along are you in your area of study?

- 2 quarters

- 3 quarters

-  4 quarters or more

Question 3.

On a scale of 1 to 4, how familiar are you with your institution's online library chat

service?

- 1 – Not familiar at all / I have never used it

- 2 – A little familiar / I am aware it exists, but have never used it

- 3 – Somewhat familiar / I have used this service at least once

- 4 – Very familiar / I use it all the time

Question 4.

If you have used your institution's online library chat, please rate your level of

satisfaction with the service on a scale of 1 to 4.

- 1 - Very dissatisfied with service

- 2 - Slightly dissatisfied with service

- 3 - Satisfied with service

- 4 - Very satisfied with service

- I have not used my institution's online library chat.

Question 5.

Have you ever referred another student to the library chat service for assistance?

- Yes

- No

Question 6.

Why or why not?

- [Comment box]

*Best Practices Document*: Some libraries provide a document outlining what their chat

service will and will not help with when it comes to research and homework assistance.

For example, the document might include expectations about chat etiquette, what a

student can expect from chat in terms of help, and/or a list of services that are not

provided by the library chat staff.

Question 7.

Does your institution provide a document like the one described above?

- Yes

- No

- I don't know

Question 8.

Please review the best practices document located here: [insert URL link to best practices document created for capstone - Appendix B] Are the expectations outlined for students clear - are you able to understand them?

- Yes

- No

Question 9.

Where would you expect to find a document like the one you viewed for the previous question? (Select all that apply)

- Near or in the chat widget

- In a library tutorial

- In the resources or syllabus for my class

- On the library home page

- Other [Fill in the blank]

Question 10.

Has the addition of the best practices document improved your overall experience with the library's online chat service?

- Yes

- No

- I don't use the library's online chat service

Question 11.

Please use the space below to provide any additional comments or feedback regarding

your institution's library chat service and/or best practices that you feel might make the

service better.

- [Comment box]

**End of Survey.**

**End of Survey Statement:**

Thank you for participating in this survey. Your answers are a valuable part of this
research project. Again, if you have any concerns or questions about your rights as a
participant or about the way the survey was conducted, please contact:
      Sara Stambaugh, sstambaugh01@hamline.edu

Appendix D

Institutional Librarian Survey

**Consent Text**

This survey is being administered by Sara Stambaugh, a Hamline University Graduate Education student, as part of a research study to gather information about librarian perceptions of the effectiveness of the newly implemented best practices for the online "chat with a librarian" service which is offered at your educational institution. Information gathered during this survey will be written up as public scholarship and will eventually be published in Hamline University's Bush Library Digital Commons, a searchable electronic repository, and it may be published or used in other ways. The information learned from this survey will help inform best practices and chat etiquette in an academic library setting, which in turn may change the way libraries approach virtual reference experiences and best practices for interacting with students/users.

You are being asked to complete this survey because you are a librarian who participates in the staffing of your institutional chat service. This survey consists of five multiple-choice, two fill-in-the-blank, and two open-ended questions for you to provide your thoughts. The survey should take between 5 and 10 minutes to complete.

There is little to no risk for you if you choose to participate. Your responses are voluntary and will be kept confidential. Responses will not be identified by individual. All responses will be compiled and analyzed as a group for the purposes of this research.

This survey is being distributed with permission from the School of Education at Hamline University and from the Rasmussen College Institutional Review Board. You are free to complete this survey or not at your own discretion. If you have any concerns or questions about your rights as a participant or about the way the survey is being conducted, please contact:

Sara Stambaugh

Having read the above, I understand that by clicking the "Yes" button below, I agree to

take part in this study. You may opt out of the survey at any time without negative

consequences by exiting your browser window.

- Yes - I agree to participate.

      ○    Selecting this option will take participants to survey questions.

- No -  I do not agree to participate

      o  Selecting this option will take non-participants to a "Do Not Agree"
         Statement:

            Thank you. You have decided not to participate in this survey. No
            data has been collected from you.

**SurveyMonkey - Questions**

Question 1.

Approximately how many hours per week do you personally staff online chat?

- [fill in the blank]

Question 2.

Since the implementation of your institution's best practices policy for online chat, have

you noticed any differences in the number of students who utilize the service?

- Yes, the number of students I usually serve has increased.

- Yes, the number of students I usually serve has decreased.

- No, the number of students I usually serve has remained the same.

Question 3.

Since the implementation of the student expectations document for online chat, have you

noticed any differences in the quality of your interactions with students?

- Yes

- No

Question 4.

If you have noticed any differences in the quality of your interactions with students, what sort of differences have you noticed?

- [fill in the blank]

Question 5.

On a scale of 1 to 4, how effective would you say the new policy and expectations documents are compared to the previous iteration?

- 1 – Adversely effective / Has diminished effectiveness of virtual reference services
- 2 – Not effective / Has neither improved nor diminished virtual reference services
- 3 – Somewhat effective / Has slightly improved virtual reference services
- 4 – Very effective / Has greatly improved virtual reference services

Question 6.

Has the addition of the best practices documents improved **your** overall experience with the library's online chat service?

- Yes
- No
- I don't know

Question 7.

In your opinion, has the addition of the best practices documents improved **the students'** overall experience with the library's online chat service?

- Yes
- No

- I don't know

Question 8.

What improvements, if any, would you suggest for future best practices implementation?

- [Comment box]

Question 9.

Please use the space below to provide any additional comments or feedback regarding your institution's library chat service and/or best practices that you feel might make the service better.

- [Comment box]

**End of Survey.**

**End of Survey Statement:**

Thank you for participating in this survey. Your answers are a valuable part of this research project. Again, if you have any concerns or questions about your rights as a participant or about the way the survey was conducted, please contact:
Sara Stambaugh, sstambaugh01@hamline.edu

Appendix E

Springshare Products

Springshare is company that provides web-based software for libraries and educational

institutions. The software helps institutions to share knowledge, analyze services, and

connect with users (Springshare, n.d.b). A brief list and description of services provided

can be found below.

- LibAnswers with LibChat - a reference platform combining FAQs, Chat, Email,

  SMS, Twitter, and stats.

- LibGuides - a publishing platform that allows for easy knowledge-sharing.

- LibCal - a calendaring and event management platform.

- LibAnalytics - a data collection and management platform to store and analyze

  data and use statistics.

- LibStaffer - a scheduling platform for staff and service-point scheduling.

Find out more about these products at: http://www.springshare.com