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This study examines the use of chat reference services in the Health Sciences Library at the University of North Carolina at Chapel Hill over a period of two and one half years. Chat reference transcripts were extracted from LSSI's Virtual Reference service and then examined for the time in which they occurred. Once the transcripts were examined, results were charted in order to observe trends over time.

The results showed that usage of chat reference services is increasing, though needs a lot more use in order to compare to phone and face to face reference services. An analysis of the chat transcripts showed that patrons are more likely to use chat reference services to ask more complicated questions than those normally asked over the phone or in person.

Headings:

College and university libraries -- Reference services

Reference services -- North Carolina

Academic libraries – Reference services

Electronic reference services

Reference services – automation

AN ASSESSMENT OF CHAT REFERENCE USAGE AND TRENDS AT THE
HEALTH SCIENCES LIBRARY AT THE UNIVERSITY OF NORTH CAROLINA
AT CHAPEL HILL

by
Jennifer Emanuel

A Master's paper submitted to the faculty
of the School of Information and Library Science
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Approved by:

Jeffrey Pomerantz

❖ Introduction

Chat reference is only the latest technology to influence the traditional reference interaction. As library technologies continue to evolve, different technologies have come to the forefront and have come into daily use among librarians and library patrons. However, some technologies used in libraries come and go and are basically trends, with no lasting impact on library services.

There is current debate over the current and future status of chat reference. Much has been written about online chatting and its potential for library use, though most literature stops and case studies short of examining the usefulness and effectiveness it is having on individual library services. There has been a lot of analysis of its potential in an academic library setting, but relatively few studies as to how it is evolving the reference interaction and whether or not patrons are utilizing the service. The literature also has a heavy focus on the planning and implementation of chat reference, but generally does not take the analysis a step further to examine the status of chat reference after implementation.

In today's increasingly digital age, academic libraries are continually attempting to evolve into digital information centers that increasingly focus on electronic materials and access to them. This increase in materials available electronically calls into question the idea of a library as a building in which one must physically be present to ask questions and search out their answers in a

print format. Today's libraries have an increasing wealth of electronic resources that are available outside of the physical library, and therefore it is also increasingly necessary to have reference services available electronically with access outside of the library. However, chat reference aside, there are no synchronous mechanisms for having a reference question answered instantaneously as would be the case if a question is asked to a librarian at the physical reference desk. The current electronic standard, email is not always a useful mechanism for asking a question because of its asynchronous nature. An email question can be sent and a reply not generated for hours or even days; this lag time allows for the patron to find their information elsewhere by conducting their own searching, which may overlook a valuable aspect of their research.

Therefore, chat reference is currently the primary way in which a patron can have a synchronous reference interview with a reference librarian. The conversation has the added bonus of being at the point of need. As the patron feels they have a question, they can get an instant answer that is applicable to their searching needs that moment tailored for the electronic resource they are using. Chat reference also has the convenience that it can be conducted from any location and can grant reference services to those who do not have physical access to the library or else would rather have the convenience of conducting research from a different location.

So is chat reference being adopted by libraries and their patrons alike? Most librarians who offer often do not feel that it is catching on in comparison with traditional reference methods. However, by analyzing two years worth of

chat reference statistics and transcripts from the Health Sciences Library at the University of North Carolina at Chapel Hill, it shows that patrons are utilizing the service and there are signs that chat reference is having an impact on the future of reference services. Finally, this study will examine reasons as to why librarians should be increasingly optimistic that chat reference is not just a trend but will be around to stay with all the other electronic resources that are helping to evolve libraries and library services.

❖ **Background :: Chat Reference**

Chat reference, for the purposes of this paper, is defined as a synchronous communications service that enables a library patron to create a private chat room with the reference librarian in which communication is conducted back and forth between two individuals. (Instant Messaging Planet, 2002) Effectively, it allows for instantaneous electronic communication between two users. Much like virtual reference through email, it allows a patron to communicate with a reference librarian without being physically present in the library and therefore without face to face communication. In a library setting, the patron with a question can initiate a conversation with a reference librarian and the question appears on the librarian's computer. The librarian then has the ability to instantly interact with the patron, gaining further information as needed, holding a conversation, or immediately assisting the patron with their question. (Foley, 2002)

However, there are numerous advantages that chat reference has over basic email reference. The first and probably most important is the ability for the librarian to gather more information on the patron's inquiry and conduct a more formalized reference interview in a virtual manner. With standard email reference, it is often too unwieldy and too time consuming for the librarian to gather more information on the inquiry; this slows down the amount of time it takes for the patron to receive a valid answer. This lapse in time does not support the idea that email allows for a fast communication method. However, with instant messaging, the librarian has the ability to obtain more information from the patron in much the same way as one would while conducting a traditional reference interview at the service desk. The main differences are that the interview is not conducted in person and it is typed rather than spoken. This allows for some non-verbal clues to be presented that are not always possible in email communication. Therefore, chat reference has the advantage of the opportunity for a reference interview over email reference, and therefore mimicking the communication of the reference desk. (Zhuo and Small, 2002)

Another advantage that chat reference has is that there are no physical boundaries standing in the way of providing reference services. (Foley, 2002) No longer is a physical presence required of the patron in order to receive the assistance of a reference librarian. In this way, chat reference reaches out to populations that normally will not come into the library. This is especially useful for distance education students, and gives them a more instantaneous way to contact a reference librarian rather than through email. This form of reference

also reaches out to the student population, many of which are already regular users of chat programs, who often attempt to avoid trips to the library by conducting research electronically from their dorm rooms. Students therefore often will try and attempt to answer their own questions rather than seek out the help of a librarian. However, with the option for a chat reference, a student can get an answer at their point of need, without traveling to the library, and without the embarrassment of realizing they need help. If an in person visit to the library is required, either for a more in depth consultation with a librarian, or access to materials not available electronically, the librarian can suggest this to the student and also take the edge off off speaking face to face with an expert. Therefore, for these reasons, chat reference makes reference services more accessible to more users than those with physical library access or lacking the convenience to come to the library.

Chat reference also allows for multitasking, both on the part of the patron and the librarian. (Madden, 2003) Since there is a time delay during a chat conversation while the other party is typing, it is possible to conduct other activities while carrying on a chat reference dialog. The librarian could be answering other questions, be on the phone, or doing other work while working on a chat reference request. The patron can be writing a paper, conducting their research, or any other tasks while chatting. Chat reference does not require undivided attention and therefore can help both parties multitask their work.

There are also technological features included within the chat reference software and with the mode of communication that chat reference offers. (Foley,

2002) Communication through text eliminates barriers to access to those with hearing disabilities and with problems either speaking or understanding the English language (although not those with English writing difficulties), therefore reaching out to the international community. Chat reference also appeals to different learning styles and therefore aids patrons who are more visual learners. Chat allows for the simple transmitting of electronic data, making it easy to send complicated and lengthy URLs that may be impossible to describe in person or over the phone. Some chat reference products offer co-browsing options, which shows the patron what the librarian is doing on their computer, and therefore offer a visual guide as to how to conduct a search or accessing library materials.

However, despite all of its advantages, chat reference is not the definitive way of conducting reference services. There are numerous problems associated with it that can make it less appealing for some patrons and librarians. Although it allows reference services to those without physical library access, it still poses problems to those with visual impairments and those with physical disabilities who have difficulty typing. Detailed and lengthy inquiries can become too complicated to type out explanations, and either a face to face consultation may be necessary or a follow up over email, which voids out some of the access advantages. It also puts the reference librarian on the spot to answer the inquiry, and if the answer is not easily discernible, then a consultation may also be necessary and the librarian may need to conduct additional research away from the patron.

An additional technical problem with chat reference is that there are many possible chat clients available for reference use. These vary from popular mass-marketed and free programs such as AOL's Instant Messenger and Yahoo! Messenger to products geared towards the library market such as Virtual Reference from LSSI. At the current time, there is virtually no interoperability between different chat software programs, unlike with email. Therefore, if a library chooses a chat reference program that requires a client on the patron's computer, it usually must be the same client that the library uses, as software integration is not yet standardized. In this respect, there may be some technical barriers to use, as computer must meet software requirements and public computers may not have the required software installed. Some of the programs geared specifically towards libraries store the client on a central server and therefore do not require a download on either the patron's or the librarian's computer. The library, in choosing a chat reference client, needs to examine many different clients in order to see which features fit their needs the best and which client is most useful to their users.

Chat reference shows promising advantages for the future. It is another method of access to the library and therefore is an additional method librarians can reach out to their audience. It is an alternative to traditional reference services and appeals to the increasingly technical and virtual society of today. Chat reference is still growing and in popularity and implementation and only shows room for growth and increase in both features and use.

❖ Statistics

According to the Pew Internet and American Life Reports, there is a continued upward trend in use of instant messaging programs, especially among younger users. Additionally, Americans are now more likely to conduct research on the Internet than go to the library. It is these two trends that are evidence that chat reference has a place in academic libraries. Since we want to continue to appeal to young users we'll meet them where they are and to have a place in people's research, librarians need to adapt the same communication technologies as the users.

The Pew reports view teenagers and college students as early implementers of online technologies. As they are faster to adopt new technologies, they will carry their interest and skills on with them as they get older. Colleges students in particular are used to having high speed internet connections available to them all the time, and thus have become reliant on web technologies and see them as a daily facet of their lives. They are used to being in an environment in which they are in touch with others and a wealth of information, and they will keep these resources near to them once they leave school and enter the workforce. (Jones, 2002) Therefore, what college students have and do today is an indicator as to what American society will have tomorrow.

Today's youth are more likely to use the Internet for research than go to the library. This fact is troubling to librarians, but they are aware of this trend and are attempting to use resources to keep patrons using the library. Among

college students, 73% state that they now use the Internet more than the library to conduct information searches; only 9% say they still use the library more for their searches than the Internet. This trend, backed up by student comments shows that students are more likely to use the Internet for research, and then go to the library for additional information and further assistance. Also, when college students do go to the library for information, they are drawn towards electronic resources over print. (Jones, 2002)

Concerning teenagers, research trends also parallel those of college students, as 94% of them have used the Internet for school research and 71% say they mostly used web resources for their last big school project. (Lenhard, Simon, and Graziano, 2001) One quote stated in the Pew Report was from a 15 year old boy who said, "Without the Internet you need to go to the library and walk around looking for books. In today's world you can just go home and get into the Internet and type in your search term. The results are endless. There is so much information that you have to ignore a lot of it." (Lenhart, Rainie, and Lewis, 2001) Teenagers, as the future college students and the future technology leaders, are an important demographic that academic libraries must examine when looking at research and technology trends.

Americans are also turning to instant messaging as a way to communicate to both colleagues and friends. Although instant messaging is not outpacing email in terms of use, its use is growing, as by the summer of 2002, 46% of online Americans sent at least one instant message. This usage has grown; in the same 2002 survey, 52 million Americans had used IM, whereas a similar

survey in March of 2002 indicated 39 million used it, an increase of one third. Additionally, on a typical day in 2000, 10 million Americans used IM, whereas by the summer of 2002, the number had grown to 13 million. Therefore, it is obvious that online Americans are instant messaging, and it appeals to both men and women equally. (Madden, 2003)

America's youth are using instant messaging software at an even higher rate than adults. 74% of online teenagers (13 million) have used IM and 64% of them use instant messaging several times a week. Although they are quick to say that it has not replace the phone as their primary social means of communication, 19% do say it's the main way of dealing with friends. (Lenhart, Rainie, and Lewis, 2001) Additionally, college students are also using IM clients as 74% have a screen name and 26% use it on a typical day. College students also use IM has a social means of communication (approximately 29%) and state that they use electronic tools such as IM and email to "reproduce the social interaction with which they have had previous experience." (Jones, 2002)

Libraries, in their increasing awareness to stay viable in the technological age, recognize that students are going online to conduct research and also that they are turning to electronic ways of communication in their daily lives. Therefore, it is inevitable for libraries to begin using chat technologies to link to their patrons and get them to once again use library resources. The combining of these two ideas is what chat reference is all about. Patrons are willing to combine these two, as 41% of teens have used email and IM to contact their

classmates and teachers to get assistance with schoolwork. (Lenhart, Simon, Graziano, 2001).

❖ **Chat Reference Services at UNC-Chapel Hill**

The University of North Carolina at Chapel Hill began to offer chat reference services during the summer of 2001. The campus is composed of three separate library divisions: academic affairs, law, and health sciences. The academic affairs libraries and health sciences currently participate in the chat reference program at UNC-Chapel Hill, and have worked together on the project since its inception.

Since the inauguration of chat reference, the majority of libraries at UNC-Chapel Hill has used the Virtual Reference software from Library System and Services, Inc. (LSSI). LSSI was chosen as the campus vendor for chat reference for several reasons. Primarily, LSSI Virtual Reference software was the only chat client that at the time was specifically marketing towards libraries. Secondly, colleagues at area Universities (Duke and North Carolina State) were using the software and therefore had some familiarity. These colleagues spoke well of their chat reference services and also provided assistance to UNC-Chapel Hill libraries in both adoption and training. Finally, as the Health Sciences Library (HSL) was about to undergo a major renovation, the idea of providing a reference service outside of the library was seen as an important benefit. (McGraw, Heiland, Harris, 2003)

Although both libraries use the same LSSI virtual reference software, they operate separate service queues. This was primarily done because the two libraries serve very different clienteles, and questions could be routed to librarians with a particular expertise in the respective subject of the patron's question. Each library had their own point of entry located on their respective website. Initially, hours of service did not overlap so that someone from one library was on the service at a time. In the beginning, an academic affairs librarian was online Monday through Friday from 2:00pm to 4:00pm and again Monday through Thursday at 7:00pm to 9:00pm. The health sciences chat reference was available 11:00am to 2:00pm Monday through Friday, 6:00pm to 7:00pm Monday through Thursday, and 3:00pm to 4:00pm on Saturday and Sunday. Currently (March 2004), the hours have been expanded and frequently overlap. At the academic affairs libraries, hours are now Monday through Thursday 10:00am to 9:00pm, Friday 10:00am to 5:00pm. Additionally, it is offering late night service Sunday through Thursday from 9:00pm until midnight through cooperation with Duke and North Carolina State libraries. The Health Sciences Library currently provides chat reference service Monday through Friday from 10:00am until 4:00pm.

The UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

Catalog Search Keyword (use and,or, not) **LIBRARIES** 

Advanced Catalog Search

How Do I...? Hours Reserves Article Databases & More E-Journal Finder Libraries & Collections

Ask A Librarian - Chat

- Davis Library Live Online Help
- Health Sciences Library Live Online Help
- R.B. House Undergraduate Library Instant Messenger (IM) a Librarian
- NCKnows, a state-wide library pilot project. One of many North Carolina librarians will assist you.


Use the [Libraries](#), [Hours](#), and [Locations](#) list to find many other subject specialty libraries.

Home | Hours | Search This Site | UNC Home

Comments or questions: [Library Web Team](#)
 URL: <http://www.lib.unc.edu/chat.html>
 This page was last updated Wednesday, March 03, 2004.

Ask a Librarian menu page from the UNC-Chapel Hill's main library website.

The UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

LIBRARIES 

Davis Reference Live Online Help


FAQ

Davis Live Online Help Hours

| Days | Hours |
|-------------------|----------------------|
| Monday - Thursday | 10 a.m. - midnight * |
| Friday | 10 a.m. - 5 p.m. |
| Sunday | 9 p.m. - midnight * |

* Note: 9pm - midnight hours provided by **Night Owl Live Online Help** cooperative with NCSU and Duke Universities. Night Owl Live Online Help is a trial for the Fall 2003 and Spring 2004 semesters.

Get help other ways

| | |
|---|--|
| Call 919-962-1151 during library hours. | How Can We Help You? E-mail form |
|  The NCKnows window will open in a new browser window. | Get live help 24 hours a day, 7 days a week, through NCKnows , the state-wide pilot project. One of many North Carolina librarians will assist you. |

Need assistance in locating information? Ask about:

- Selecting and locating books, journals, or databases

Live Online Help
 UNC-Chapel Hill
 Davis Reference Dept.

Name

E-Mail Address

Telephone # (include area code)

Affiliation (select most precise description)

How may I help you? Enter your request below, then click connect.

Click here to view a session that you have had in the last 30 days.

Patron Log in Screen for the Academic Affairs Library Live Online Help.

UNC
HEALTH SCIENCES LIBRARY

Main Page > About the Library > Live Online Help

Live Online Help

Consult Health Sciences Library Staff via the web

| Health Sciences Library Live Online Help Hours | |
|---|-----------------|
| Hours | Days |
| 10 a.m. - 4 p.m. | Monday - Friday |

Enter information at right, then click **Connect**.

Other HSL help: Call 919-962-0800 ([HSL hours](#))
[HSL Ask-A-Librarian](#) E-mail form

Davis Library Reference: [Live Online Help Login](#)
 Opens in new browser window.

Need assistance in locating information? Ask library staff for help with:

- Selecting and locating books, journals, or databases
- Using electronic databases and journals off-campus
- Finding quality information on the Internet
- Library services
- or... tell us your information need!

Live Online Help
 UNC-Chapel Hill
 Health Sciences Library

First name Last name

E-Mail Address

Telephone # (include area code)

Affiliation (select one)

Status (select one)

How may I help you? Enter your request below, then click connect.

Connect **Exit**

Click here to view a session that you have had in the last 30 days.
[Old Transcripts](#)

Live Online Help entry screen for the Health Sciences Library.

The UNC-Chapel Hill libraries have also developed other ways in which patrons can get questions answered via a chat reference service. Since August of 2003, the Undergraduate library has offered chat reference through the America Online (AOL) Instant Messenger client. This service requires that the patron either has the AOL client installed on their computer, or has the ability to use AIM Express, which is AOL's web-based client. The hours for this service are Monday through Thursday from 9:00am until 10:00pm, Friday from 9:00am to 5:00pm, and Sundays from 1:00pm to 10:00pm. There is also currently a pilot program in coordination with the State Library of North Carolina libraries using the 24/7 Reference application that combines both academic and public libraries. This

service is available twenty four hours a day, seven days a week and guarantees you will be able to chat with a librarian at any time. This program is currently in a pilot form, and therefore will not be discussed in depth.

R.B. House Undergraduate Library

IM a Librarian at the Undergraduate Library - "undergradref"

When can I Instant Message a librarian?

Monday - Thursday 9am - 10pm

Friday 9am - 5pm

Saturday closed

Sunday 1pm - 10pm

Who can use this service?

This service is intended primarily for UNC-CH students, faculty, and staff.

What kind of questions can I ask?

This service is intended to assist you with brief research questions. If you have a lengthy or involved question, you may be asked to [email](#) the librarian or to schedule a research consultation (919-962-1355).

Will I need to wait to chat with the librarian?

Patrons at the Reference Desk have priority over IM patrons. IM patrons are taken in a first-come-first-served order. If you would prefer not to wait, you may always [email](#) a librarian.

How do I use AOL Instant Messenger?

There are 2 ways you can IM a librarian:

1. You can download and install Instant Messenger from the [AIM website](#). All technical questions should be directed to the AIM website.
 1. Add **undergradref** to your buddy list
 2. Double click on **undergradref** to send a message to the librarian
 3. Type in your question - the librarian will respond as soon as possible.
2. If you do not wish to download and install Instant Messenger on your computer, you may use another version of AOL Instant Messenger, [AIM Express](#). This service allows you to create a screen name and to chat, without downloading any software.

Please contact [Suchi Mohanty](#) if you have any questions about this service.

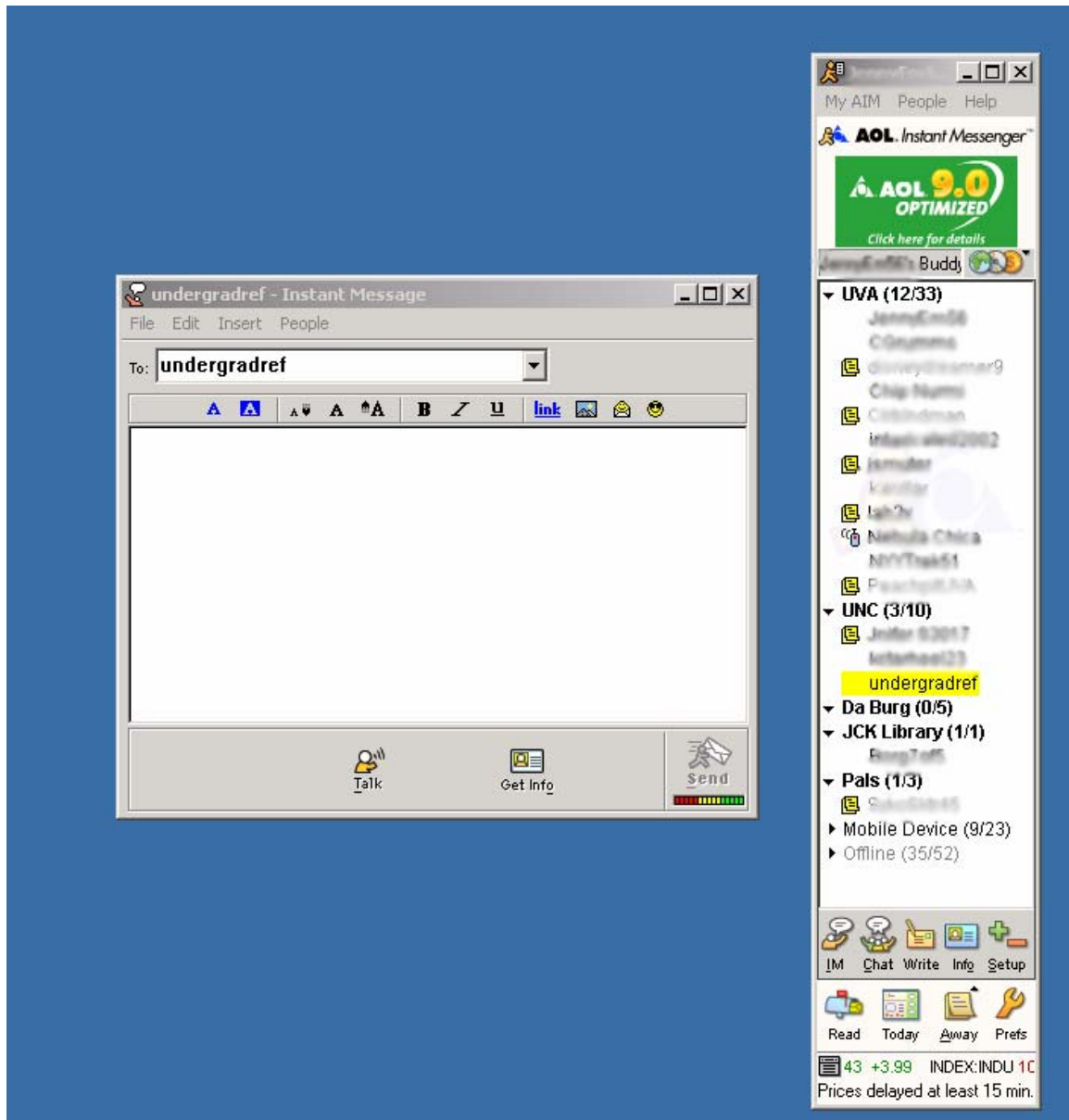
[UL Home](#) | [UNC Libraries Home](#) | [UNC Libraries Hours](#) | [UNC Home](#)

Comments or questions: [Ask a Librarian](#)

URL: http://www.lib.unc.edu/house/im_a_librarian.html

This page was last updated Wednesday, September 24, 2003.

Information page describing the Undergraduate Library's AOL Instant Messenger reference service



Example of AOL Instant Messenger “undergradref” screen name.

Back Forward Refresh

NCKnows
Answers from Pros

Ask Us Now!

REFERENCE
Please enter the following and click the "Connect" button.

Name

Email Address

Zip Code

Your Question:

Check this box to make this session anonymous. [Please click here for explanation.](#)

Connect Exit

About NCKnows

Using NCKnows

Participating Libraries

Technical Requirements

Home

Give us feedback about this service

Live Online Help from Librarians - All Day, Every Day

With NCKnows, you will be able to connect to a librarian through your computer at any time. By typing messages back and forth we will be able to give you answers, articles and more. It's easy and safe.

Disconnected? Try temporarily disabling your firewall. If you are still having problems, [contact us](#).

NCKnows can help you:

- Find answers to your research questions.
- Connect you to business, consumer health and other information specialists.
- Take advantage of [NCLIVE](#), North Carolina's collection of online articles, statistics and information.
- Connect to the wealth of NC Libraries around the state.

NCKnows is made possible with funds granted by the North Carolina State Library under the Library Services and Technology Act. Do you need help or have a question? [Contact us](#).

NCKnows, a statewide virtual reference pilot program's entry screen.

In order to make patrons aware of the new chat reference service provided by campus libraries, an implementation committee organized promotion throughout campus. The following were used as techniques to promote the service:

- Announcements in library and campus newsletters and newspapers
- Bookmarks distributed at library service desks and demonstrations
- Student, faculty, and staff demonstrations by library personnel
- Special announcements on library web sties
- Service links from various library web pages
- Changing the chat home pages to promote the features of chat

(McGraw, Heiland, and Harris, 2003)

It was hoped that these promotional activities would spark interest in the chat reference program and through increased Libr marketing and word of mouth; the program would spread, leading to increased use.

Currently, there are many options for patrons to chat with a librarian in a virtual format at UNC-Chapel Hill. Attempts at using different chat clients and expanding available hours of chat are making the program a popular one throughout the campus. Through service increases and promotion of the services offered, use is becoming more widespread throughout campus as both librarians and patrons are becoming familiar with the technology.

❖ **Methodology**

In order to examine usage trends from the inception of chat reference services at UNC-Chapel Hill, it was necessary to examine the transcripts of chat sessions. For ease of data retention and narrowing the sample size, only transcripts of the Health Sciences Library's (HSL) chat sessions were examined. The transcripts themselves were archived within LSSI's Virtual Reference servers and were easily obtainable with an administrator's login granted through the Health Sciences Library. Since LSSI does not report much in the way of statistics other than listing the reference transactions and giving the time and date of the interaction. Therefore, it was necessary to examine the chat reference inquiries individually in order to gain the necessary data. The dates examined in this study are from July, 2001 to December 2003, a time period of approximately 2 and one half years.

The first examination of the chat transcripts was designed to weed out transcripts used for training purposes. These conversations are usually between two librarians and are used to gain familiarity with the software interface and

become aware of what it is like to conduct a reference interview through chat. Many of these conversations took place in the early days of the project, as well as when new staff members came to the library and needed training. There were also some transcripts to test the system to be sure it was properly working. All of these transcripts were immediately discarded because an actual reference transaction between a patron and a librarian did not take place. As the goal of the experiment is to see if patrons are using the service and how they are using it, these transcripts are of no importance.

The remaining transcripts were then individually skimmed over to see what question was asked by the patron and how the librarian responded. For this examination, care was taken so that personal identities were concealed. LSSI does not track individual personal information with their transcripts, but whatever name the patron used upon logging in on the system is used to identify them in the conversation. This information was ignored and not recorded for this analysis. The transcripts then were ranked according to HSL's User Services Desk Log for tracking statistics. This log (Appendix 1), ranks questions asked at the service desk by the service level they require. The first category is directional, for questions that do not involve a reference inquiry; these questions often involve photocopier problems, location of an item, library hours, or an inquiry of procedure. These questions are easily answered without the aid of a reference librarian or a computer, and due to their nature are frequently not applicable to the chat environment. The next question category is Level 1, or questions that require a level of skill. These questions involve the use of a

reference source or a computer and generally involve a level of knowledge. Most often, level 1 questions concern the library ownership of a journal or book; little or no searching strategy is actually necessary to answer such a question. The final level of statistics is level 2, which are strategy based involve the use of library technology to answer the question, such as conducting a catalog search. These questions involve a level of expertise and searching skill that is normally only provided by professional librarians. Level 2 questions often involve the searching of a database, in depth training on using a library resource, or assistance in locating a material not at HSL. Not included in the desk statistics sheet, but a necessary category for chat reference is the recommendation of a face to face consultation with a reference librarian. Consultations are frequently recommended during a chat reference session because the question would be answered easier if the librarian can search with the patron present. Consultations are also useful in cases where user instruction is necessary.

LSSI also attached a date and time stamp to each chat session transcript, and this information was recorded as well. With all of this information, an Excel spreadsheet was created that listed the levels of questions asked and consultations recommended through chat sessions according to the months that they took place. Following the input of data, totals were computed both by the total number of each level of question asked and the total number of chat sessions for each month. These results were then compared to desk and phone questions (which were already recorded in spreadsheet form by another HSL

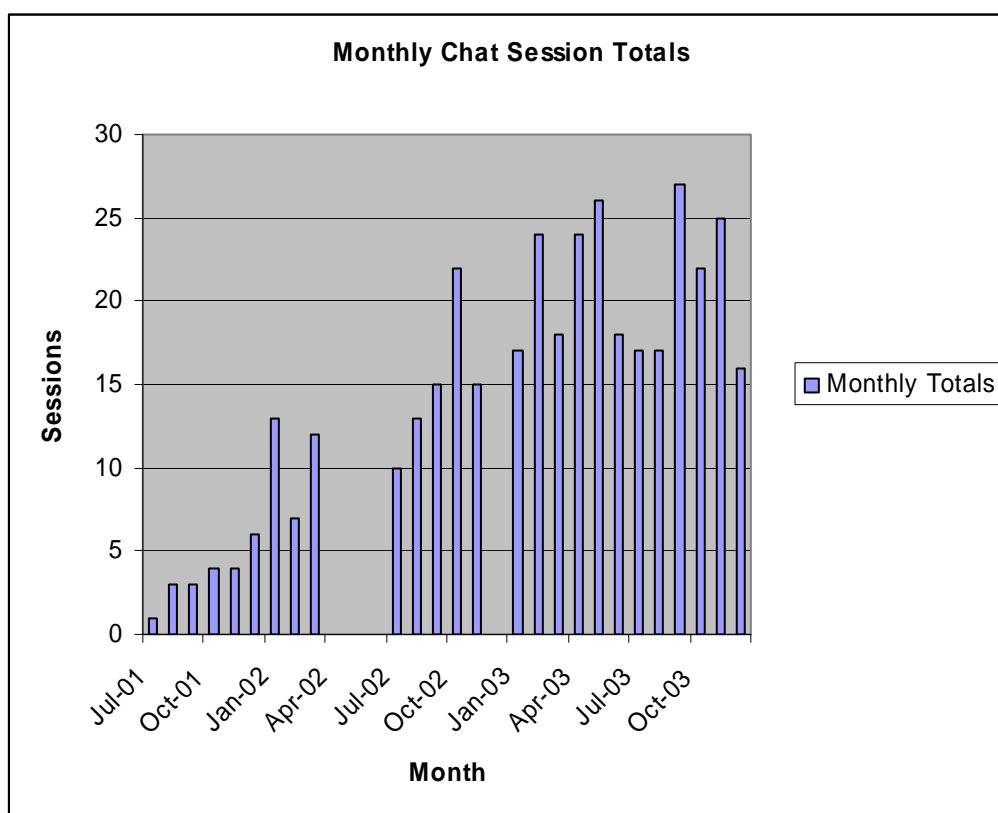
employee) asked during the same time period. Trends were recorded, as well as changes in the amount of chat reference service.

One item to note is a gap in chat data. In the fall of 2002, LSSI and UNC-Chapel Hill upgraded their software, and as a result, data from April through December 2002 was lost. This loss occurred on both the UNC and LSSI ends, and no data was recorded either in the amount of neither session nor the chat transcripts themselves. During this time, there was some manual recording of chat inquiries, giving HSL monthly totals for a few months. These totals were recorded in the monthly totals column. Due to this inconsistency in data, it is impossible to ascertain the exact number of chat inquiries during the study; for this reason the actual numbers are only estimates. Rather than looking at hard numbers to analyze chat usage and question level, it is more accurate to look at trends over time.

❖ **Results and Findings**

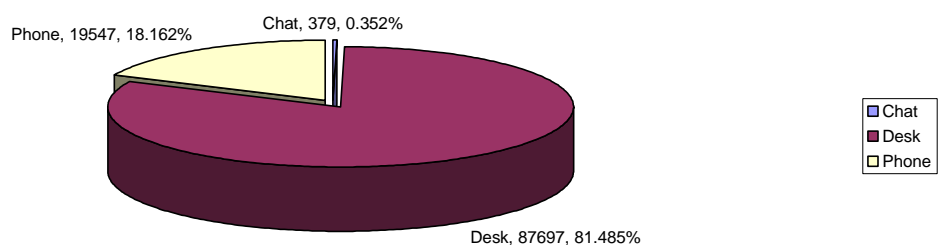
The results of this study were twofold. First, there was an observed trend in the rate of chat reference usage. This data was then compared to data for traditional desk reference and reference over the phone to see if the same trends follow through to these other reference techniques, or if it is unique to chat. The second result of the study is to see how users and librarians are using chat reference. Are the questions simple and straightforward, or is it being used to conduct more complicated searches? The results of what types of questions were asked indicate how people are using the service.

The first data ascertained is the monthly totals for the number of chat reference sessions. Although some information is missing due to the system upgrade, there is a clear upward trend in the number of reference inquiries via chat. The trend also follows the normal patterns for academic library usage; statistics are down during the summer months and higher during the academic semesters. Since UNC-Chapel Hill marketed the service when it was first offered, this growth can be contributed to more people seeing the service and its usefulness, as well as being more familiar with chat technology.



Even though these numbers are promising, and show that patrons are using the chat reference service, actual chat reference sessions account for only a very small amount of actual reference transactions taking place at the Health Sciences Library:

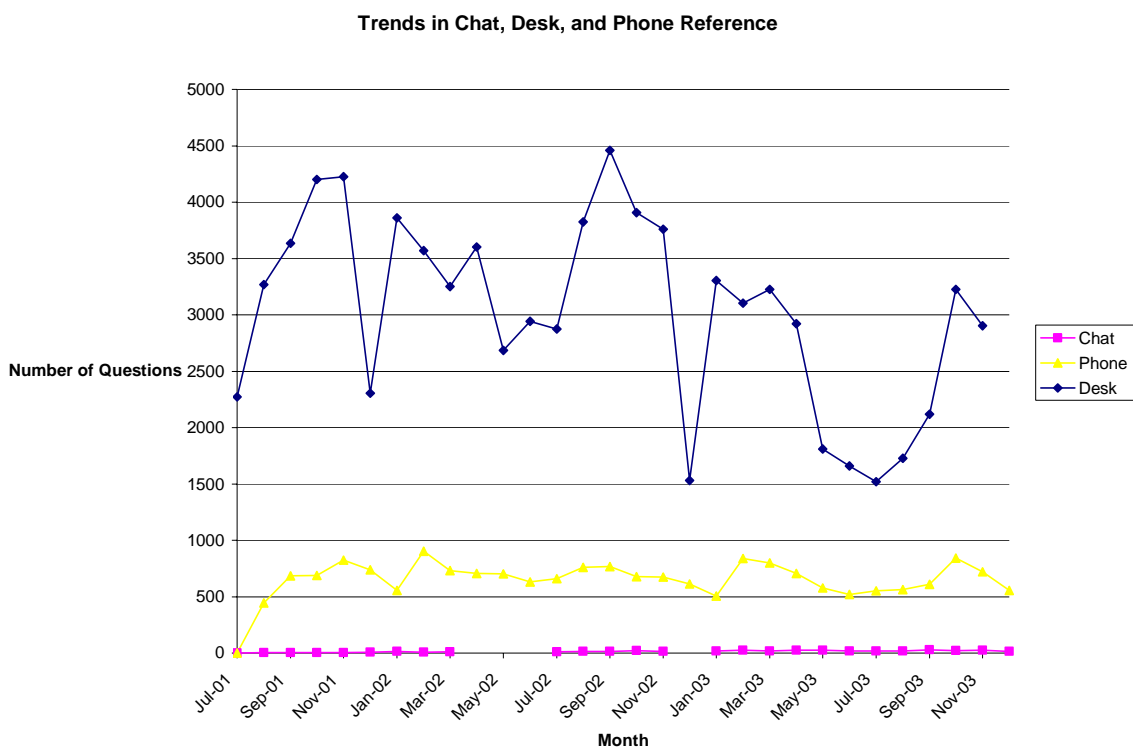
Percentage of Reference Requests by Type



The 379 chat reference inquiries during the period examined do not even make a mark on the overall amount of reference questions asked. Patrons are more familiar with traditional forms of reference and are thus more likely to turn to these forms when they need assistance. However, with the trend of an increase in chat reference, in the future there is potential for chat to make up a larger percentage of reference inquiries.

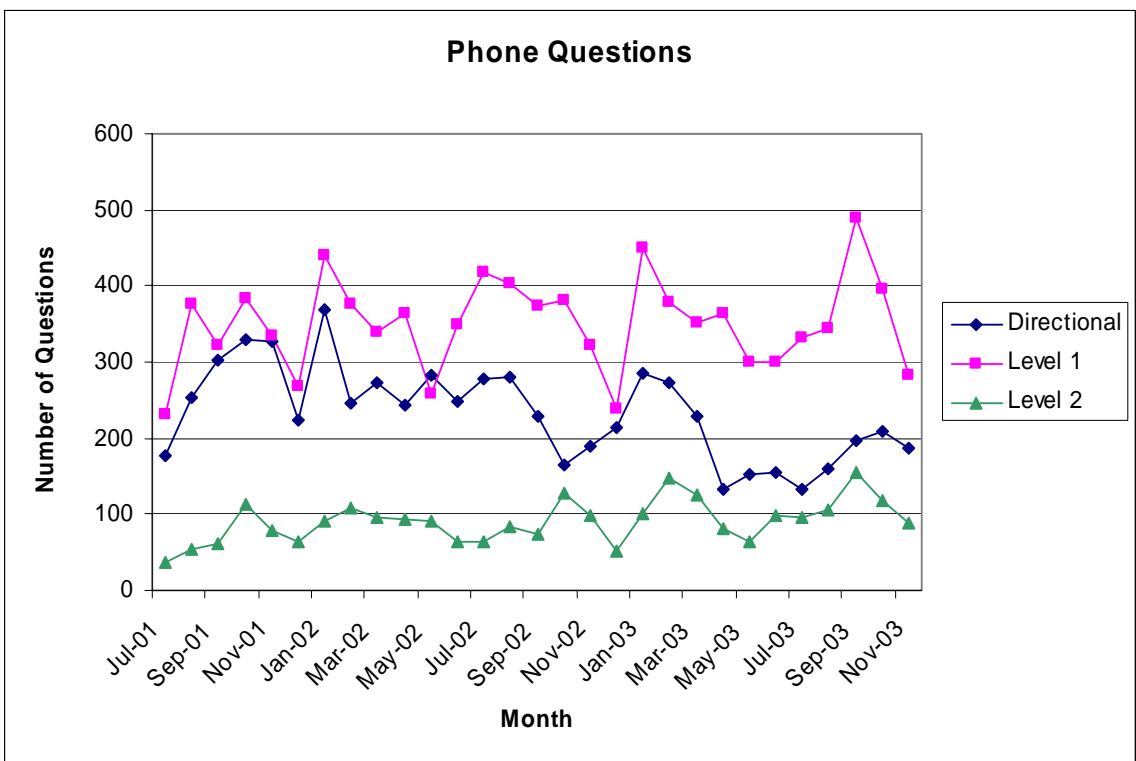
During the same time period of the implementation of chat reference, statistics were also kept for phone and desk reference inquiries. These are used as a base comparison to look at trends in these inquiries and compare them to the trends observed in chat reference sessions. Even though chat sessions are minimal, reference desk questions are slightly down overall and phone questions have remained steady. Even though the period of time over which these

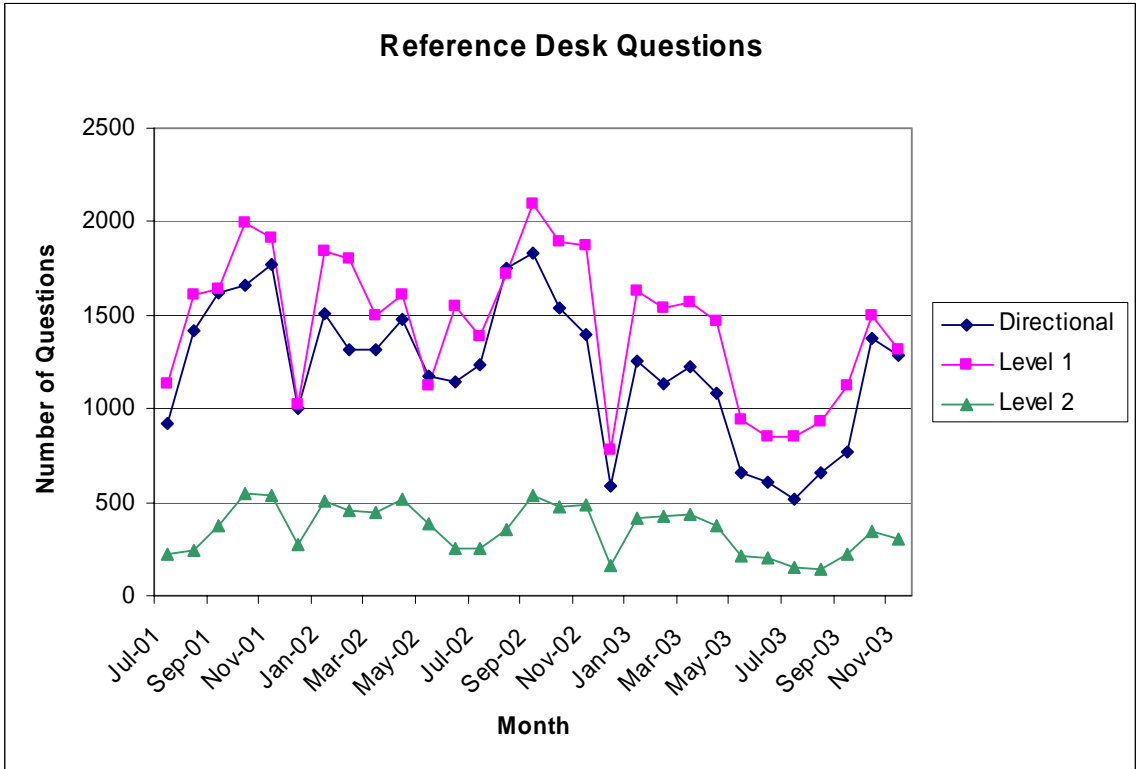
statistics was collected is rather short, this may be indicative of the trend that people are turning to the Internet for their searching and thus conducting searches mostly by themselves. Since chat inquiries are still minimal compared to the overall decrease in reference desk questions, it is inconclusive to state that chat reference services have an impact on the decrease in reference desk inquiries over the same period. However, use of the internet to answer individual questions may also have had an impact on the decrease of reference questions overall during this time period.



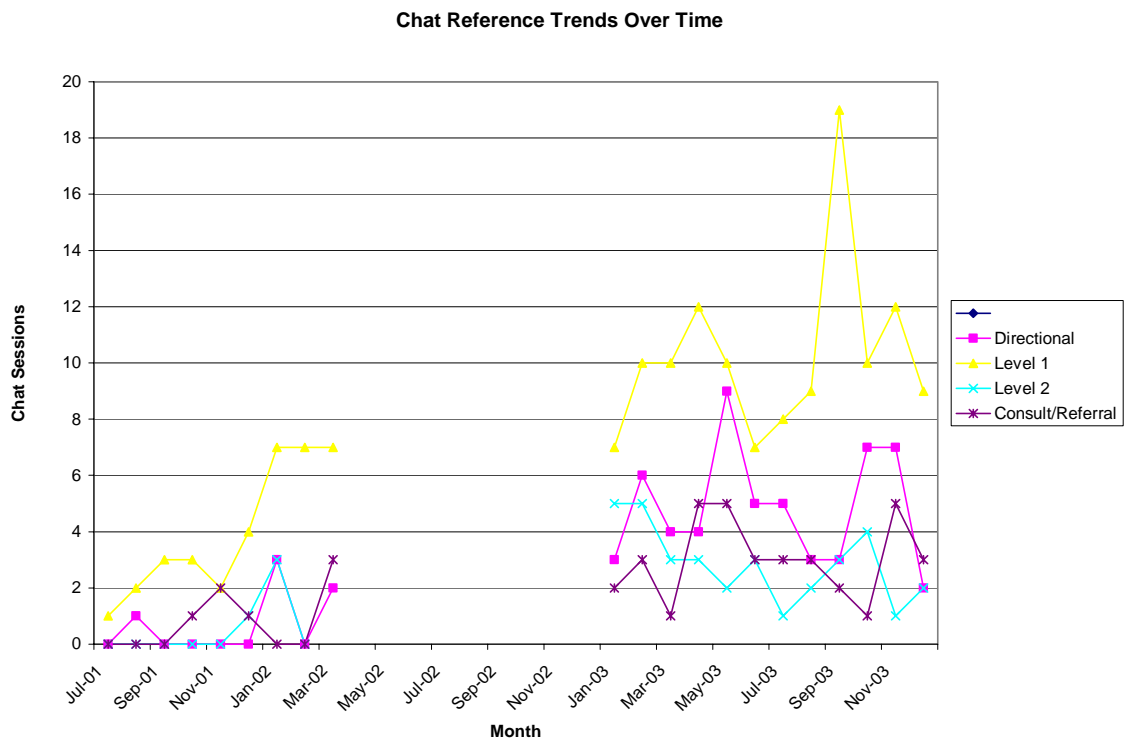
The next aspect of chat reference examined was the nature of the questions being asked. As described above, the library places its reference inquiries into three categories: directional, level 1, and level 2. For desk and phone reference, directional questions are the most common such as asking

about library hours or the location of the bathroom, with level one questions being close behind. Finally, level 2 questions are the least asked question, likely because patrons are more likely to attempt to conduct in depth research on their own time first rather than go to a reference librarian. In the proportionality of the numbers, desk and phone inquiries are very similar.





On the other hand, the level of chat reference questions did not follow the same trends that desk and phone reference had.



The data indicates that level 1 questions are the most asked questions over chat reference. The number of other questions and referrals are each about half the number of level one questions and are roughly similar in number over time. This indicates that chat reference inquiries are generally more complex than those at the desk. One indication of this is that questions that do not require the use of a computer are usually not asked. This is probably due to the fact that patrons turn to chat reference when they are in the midst of searching for the information they need and it is very convenient to click and icon and ask a question. Since directional questions do not require any reference skill or strategy, generally these answers can easily be found on HSL's website (such as hours, locations, etc.). There also appears to be proportionally large amount of more strategy and skills based questions compared to other reference forms, a fact that results from

considering that most questions ending in a referral or consultation are too difficult of a question to answer through typing the answer.

❖ Discussion

These results point to some very interesting conclusions that can be drawn concerning the status of chat reference services at the Health Sciences Library at UNC-Chapel Hill. Much of these observations are made from examining the hard statistics along with the skimming of chat transcripts. While looking through transcripts to find out their question level, some characteristics were noticed and recorded.

It is obvious that patrons are using chat reference in a different manner than they are using phone or desk reference services. This is duly noted in that simple directional questions were generally not asked via chat reference. There are several possible reasons to support this finding. The first is that these questions are simply too easy to bother to chat. If one connects to the virtual reference system, it is assumed that they got there from visiting the library's home page, where answers to directional questions are usually easily found either on the home page or on a first level link to the page. The answers to such questions are often located on the same page as a link to the chat reference service. Another possibility is that patrons are much more willing to ask a simple question either in person or in a "real" conversation over the phone. Typing a simple question may simply prove too time consuming to worry about the inquiry.

Some chat reference sessions resulted in a recommendation for an in-person referral or consultation. These were generally the result of two scenarios. Questions were often frequently recommended when the librarian on chat reference duty does not have knowledge of the topic the question is asking. This scenario is very similar to when such a question is asked at the reference desk. In both situations, the librarian on duty will give the patron the information (usually their phone number and/or email address) to contact a librarian with the necessary expertise to answer the question at hand. The majority of the referrals from chat sessions involved reference management software. Questions of this software are difficult to answer remotely as there is required software that can not be accessed remotely. Therefore, reference manager questions usually get referred no matter which medium is used to answer the question.

Consultations are also a frequent request by librarians answering questions via chat. Consultations were most recommended when a patron requested instruction on how to use a particular resource, which require a librarian to physically be present and tailor the instruction to the patron's needs. Consultations were also frequent requested for level 2 questions that the librarian felt it would be easier to do the search away from the chat interface while consulting with the patron about what their reference needs were. However, the number of consultations for this reason is dropping, possibly as librarians are becoming more used to the chat software and how to conduct a useful reference interview in a virtual medium.

Generally, it appears chat reference has an appeal to users who are embarrassed actually speaking to a person about the nature of their question. Chat allows a certain degree of anonymity in which the person asking the question does not have to look a librarian in the eye and examine their physical reactions to the question. The same hold true for phone reference, as nuances in speech can be picked up. These expressions that can be observed may intimidate some patrons who are asking complicated questions and therefore they may turn to the anonymity of asking a question via chat. For this reason, a patron who is asking a complex question may feel their reference skills are sub par and therefore turn to a less personal mechanism to have their question answered.

Another interesting observation was that when a librarian was not available to answer a question via chat and the patron asked a question, they were quick to ask using a different medium. There were multiple instances in which a question was asked but the librarian did not respond for some reason. In nearly all of these situations, the patron wrote that they will either call or email the library to ask their question. However, this partially refutes the idea that patrons may use chat reference in order to make the interaction less personal. For these patrons, a lack of physical access to the library may be the reason they are using chat reference, and they found it to be the easiest mechanism to contact a librarian.

Not having easy physical access to the library is often a reason libraries use in order to justify the implementation of a chat reference system. A rise in

distance education on many campuses (including UNC-Chapel Hill) brings students that may never actually be on campus, but still have reference needs. Chat reference is another way to bring services to this group. Often, distance education students use technology and the Internet to access their course materials, so they are often very familiar with chat technology from their use in their courses. Therefore, the transition to using chat for library reference is very natural to them.

Just as distance education users may be accustomed to using chat software to communicate for their course work and thus it is more natural for them to turn to a chat reference service, as people become familiar with a technology, they are more likely to use it. Although statistics show that not every one uses an instant messenger program, there is definitely a rise in the number of people chatting. Once instant messaging becomes widespread and the population is very familiar with it, they will be more likely to use it in other settings such as chat reference. This phenomenon was seen with the rise of email. Once people became accustomed to it and used it in their daily lives, it became a natural technique of communication that is now commonplace in reference services.

Since younger people use instant messaging programs in much greater percentages than the average population, these are going to be key users of chat reference services. As today's teenagers, who are very familiar with chatting online, go to college, they will expect to use chat as a way to communicate not only with their friends, but with academic departments as well. Therefore, it is

natural to assume that they will feel comfortable using instant messaging to inquire about research assistance. Due to this population coming to college, it is only natural for chat reference services to increase in the number of sessions, just as has been seen with email reference.

It never hurts to have more ways for patrons to access the library. Possibly, having more ways to get served would benefit someone who is intimidated from using more traditional sources of reference or does not have access to any other means. Helping out patrons in as many ways as possible should always be a goal in academic libraries, and chat reference is just another possible way to reach out to patrons. It never hurts to have more ways to access the library, and in doing so, a library is in turn making itself a stronger institution through providing better reference services.

❖ **Recommendations for Further Research**

Since chat reference services are a fairly new library technology, the subject has not been researched in depth. There are published materials on research into the implementation of a chat system, as well as initial reactions to the use of chat reference. However, there is virtually no literature on the effects of chat reference on library services. There are several ways in which it would be interesting to follow up and provide further research to investigate the effect of chat on libraries.

The first possibility of a follow up study would be to track individual visits to the chat reference service to see if users are returning to it after an initial use.

This data would be hard to track, however, because it forces the patron to attach their personal information to their reference request, which is a privacy issue that libraries frown upon. It also eliminates the degree of anonymity that lures patrons to using the chat reference service. However, tracking visitors who return to the service would show that they are using chat and find it useful enough to return. The best way to find out if a user is satisfied with a service is if they repeatedly use it, and such a study would indicate such use.

Another possible usage study would be to see where patrons are when they ask a question via chat. Since the primary audience that chat reference initially was geared towards was distance learners without physical library access, it would be interesting to analyze if this audience uses the service. This analysis could also include traditional students, to see if they are using chat reference in lieu of making a physical visit to the library. As today's college students are used to chat technologies, such an analysis would let librarians know if this patron audience uses the service. Such an analysis would also allow librarians to see if the large number of teenagers chatting online eventually results in a growth of chat reference requests once these users come to college.

Email is another form of virtual reference that was not investigated by this study. Since statistics indicated that email use rose in much the same way chat use is continuing to rise, it would be interesting to compare use of both technologies in the long run. Such a study would show librarians if chat reference services are going to reach the same level of popularity that email reference currently does.

Since younger users are less likely to turn to the library for their information needs, but are comfortable using chat technologies, it would be interesting to see if chat reference helps bring users back into the physical library. Since in many ways chat has become an important communications medium for youth, then it is possible for it to become synonymous with typing in a question to a search engine—a patron gives it a question, and an answer is given back. Chat has the advantage of having personalized results that a search engine does not, and for this reason they could compete for patron's searching needs. Added to this is that chat can lead to a referral or a reference better or more applicable than any on the web, which would in turn get patrons back into and using the physical library. It would be interesting to study if marketing chat reference service leads to an increase in chat sessions and then also leads to an increase in follow up visits to the library itself.

A final aspect that can be studied along with chat reference service is the idea of the library as a physical place. Much has already been written about the idea of the physical library, especially with the abundance of digital services. Chat reference, being a way that users can get specific answers and assistance digitally, makes for even less of a reason to have to use a physical library. This merits the idea that libraries can be completely virtual information centers.

Therefore, it would be interesting to study the effects of use of chat reference to patron's concepts and sense of library physical space.

❖ Conclusion

This study is just one library's experiment with chat reference services, along with evidence that the usage of the technology will continue to grow. It is designed to show one library's long term experience with chat reference and attempts to answer questions of usage and the question nature of the service. Since there is little published about this topic and therefore few sources to refer to, this study proved to be challenging.

A weakness in the study is the lack of concrete data. Since some of the data was lost during the system upgrade, it was impossible to have concrete statistics; one could only show trends in usage over time. Another related weakness is just the lack of data itself; the amount of conducted chat sessions was so small that it was difficult to ascertain a great deal of information. However, similar studies in the future will not have this problem.

Much of the lack of information comes from the lack of gathered statistics of chat reference services. The only way to get in contact with users is to have them comment on the service while they are logged in to the system. Some people simply do not answer the survey or leave it incomplete; there is also the issue of having personal information tied to the reference question. Also, since the service is so new and no in depth studies have been conducted to measure the various statistics that can be gleaned from chat reference users, what statistics to collect is in question.

One concern that libraries have over the use of chat reference is that it is not getting enough use to be considered a worthwhile program. However, trends within the library in this study show that there is use, the usage is growing, and will continue to grow. The statistics on who is using chat technologies also points to an increase in chat reference use as younger users go to college and use academic libraries, as well as chat use becomes more widespread among all areas of the population. This study has shown there is a good chance that growth of chat reference sessions will continue, making the future bright for chat services as another means of access.

Appendix A – Reference Desk Record Sheet at the Health Sciences Library,
UNC-Chapel Hill

USER SERVICES DESK DAILY LOG FALL / SPRING

| Date | Exit Meter | Directional | | Level 1: Skill Based | | Level 2: Strategy Based | | Unscheduled Assistance |
|-------|------------|-------------|----------|----------------------|----------|-------------------------|----------|------------------------|
| | | On-Site | Off-Site | On-Site | Off-Site | On-Site | Off-Site | |
| 7:30 | | | | | | | | |
| 8:00 | | | | | | | | |
| 9:00 | | | | | | | | |
| 10:00 | | | | | | | | |
| 11:00 | | | | | | | | |
| 12:00 | | | | | | | | |
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| 7:00 | | | | | | | | |
| 8:00 | | | | | | | | |
| 9:00 | | | | | | | | |
| 10:00 | | | | | | | | |
| 11:00 | | | | | | | | |

Good data supports better decisions. ___ USC ___ AskLib ___ Off-desk

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