The Effectiveness of Chat Reference Services:

An Annotated Bibliography

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Introduction and Scope

The following bibliography covers the effectiveness of chat reference services, including how the RUSA guidelines can safeguard against negative chat reference experiences for users, how to assess the quality of a chat reference, and how user motivation for using chat reference services affect marketing efforts. Articles refer to the evolution of the internet and user experiences with virtual or digital reference services, particularly chat reference and its limitations, user and librarian behaviors and interactions, and user expectations for quick and accurate information. Several articles discuss the comparisons between in person reference and chat reference services and whether one is more effective than the other. Multiple studies of the effectiveness of chat reference services are included to show just how varied the arguments for and against virtual reference are. All of the articles were published between 1999 and 2009 and an importance was placed on including both studies as well as scholarly research.

Description of Topic

With the evolution of the internet and online reference materials it was inevitable that librarian services would evolve as well, as user expectations for information became more immediate. To meet these ever growing demands, librarians opted to take traditional reference services one step forward by offering electronic reference services, such as email and chat. As these virtual or digital reference services became more popular, librarians strived to provide the highest quality of service, however issues abounded including how one can maintain a consistent quality of service in an electronic environment when all interactions are by nature impersonal. The future of chat reference is highly debated as professionals argue how to maintain digital reference
services in a steadily evolving environment while continuing to provide quality service to the
user populations they serve. With the creation of new electronic reference services that market
24/7 aid to users around the world, it is imperative to understand the importance of worldwide
information exchange and to develop methods and procedures to ensure the highest level quality
service without affecting the users need for immediate access or becoming overloaded with
requests.

**Literature Review**

With the evolution of digital reference such as email and chat, it has become more
imperative to devise methods in order to assess quality of service, as well as user demands and
librarian behaviors. It is clear that librarians are divided on the issue of digital reference, but all
agree that the goal of the reference librarian, no matter what medium, is to meet the information
needs of users by providing access to the services and collections of their libraries. If chat
reference services are another means in which to provide this information, than librarians must
find a way to make the service work for them and their users. In order to do this, there are some
questions that need to be answered, which include: 1) what motivates a user to use chat reference
services as opposed to more traditional services, 2) how different are interactions and behaviors
in a chat environment than those in the more traditional, face-to-face reference, 3) how do
reference librarians interact with users in a chat environment and how do these interactions affect
their behaviors, 4) what librarian behaviors are necessary in order to ensure user satisfaction, 5)
how do you assess the quality of service of chat reference interactions, and 5) what user groups
should chat reference be marketed towards and why.
In order to find the means in which to provide high level quality of service, librarians must first understand their users, their needs, and their motivations behind using the less traditional reference service. In their 2008 study, Naylor, Stoffel, and Van Der Laan questioned how students at ISU conduct their research. The predominate response to this study was that most students conduct their research at home by searching both the internet, and if necessary, the library’s website in order to request materials to be later picked up. What was interesting about this response was most students questioned in the focus group where on campus, and not distance education or remote students of ISU, therefore one would assume, albeit foolishly, that these on campus students would prefer to visit their library to conduct research. That is not to say that all students prefer the impersonal nature of this type of research. Lauer and McKenzie (2003), argue that what users want is more personal and human interaction in order to satisfy their information needs, while Joinson (2004) feels that users who prefer the impersonal nature of the digital reference service do so because they are able to control how they are viewed.

As Naylor, Stoffel, and Van Der Laan argue that most students are unwilling to substitute chat reference services for the personal nature of the more traditional reference, librarians must find a way for both types of service to complement one another. Anderson (1999) agrees with Naylor, Stoffel, and Van Der Laan’s argument and finds that digital technologies should aid in enhancing library collections instead of replacing them, while Johnson (2004) argues that though face-to-face reference is the most popular it could be explained by the fact that is it also the oldest service and therefore the most known. If digital reference hopes to become as popular as more traditional reference services it must become more visible. Johnson also argues the correlation between formality levels and the more traditional reference interview. While some find the reference interview to be the greatest trick in a librarian’s arsenal, Lee (2004) finds the
interview important, but unnecessary at times while Horowitz (2005) argues that the nature of the chat reference makes instruction difficult to maintain and though a reference interview would be helpful it often does not take place in the chat environment. Horowitz also argues that this lack of reference interviews in a chat environment leads one to question whether digital reference staff requires additional training on appropriate behaviors.

The evolution to chat reference required a 2004 revision of the *RUSA Guidelines for Behavioral Performance of Reference and Information Services Providers* in order to compensate for the importance of communication skills in a virtual environment. The question of librarian behavior, especially in a virtual environment, has become important in indicating whether a reference transaction has been successful and therefore satisfying to the user. The five main areas of approachability, interest, listening/inquiring, searching, and follow up are all relevant for measuring user satisfaction, even more so as they have been reformatted to reflect the evolution to a virtual environment. Just how important is a librarian’s behavior in measuring quality of service and user satisfaction? Kwon (2004) argues that this behavior ultimately lays the foundation to a positive reference experience and that the revised RUSA behaviors lead to higher levels of user satisfaction. This importance of librarian behavior in the digital environment is further acknowledged by Westbrook (2007), who argues that reference librarians must establish levels of formality in order to establish a power relationship to indicate their level of expertise. This level of formality may help move the chat environment from one of social to academic in nature, which is a concern when it comes to marketing this service. Regardless, librarians must understand that digital sources have brought about change, and as Tenopir and Ennis (2002) argue these changes must bring about new behaviors and expectations of both reference librarians and users.
Over the years there have been numerous studies done to assess user satisfaction with chat reference services and the quality of service they are being provided. Studies included select focus groups, analysis of hundred of chat reference transcripts, surveys to the members of the Association of Research Libraries, email surveys to students who had previously used chat reference, and immediate exit surveys to users after their chat reference has completed. The main arguments are how accessible should information be, how immediate are user information needs, and how can reference librarians meet and satisfy their users demands. In their article on the use of online consortia to meet the needs of users, Meert and Given (2009) argue that though some academic libraries have turned to consortia to meet user requests 24/7 they have concerns that staff outside of their institution can answer the reference requests appropriately and how to measure the quality of service when using individuals outside of their own institution. If online consortia are not the answer than what is? Reichardt’s (2006) article on information overload stresses the importance of librarians providing reference to users off-site by “bringing the information desk from the library to the users’ home base” in a means to provide “the quickest route to the answers they are seeking,” yet Lee’s (2004) study indicated that chat references last longer than most reference services, both traditional and digital, with the average length running around 22 minutes. If chat reference is unable to supply users with quick information than what is the best option? According to Horowitz (2005), emails can often be as fast and effective as a live chat reference; however users in Pomerantz (2006) study found chat sessions to be very effective in meeting their immediate information needs.

Although some have viewed chat reference as the future of reference services, as the number of users have declined some libraries and universities have suspended their chat reference services and others seem unsure of what user populations to market their services to.
Johnson’s (2004) findings suggest that chat reference should be marketed towards “facilitating life-long learning,” and establishing a strong relationship with both students and alumni. Johnson’s argument is that most students are not aware of chat reference services, and those that are aware are unsure if they would use the service again, due to negative initial experiences. Without the strength of repeat users the future of chat reference is uncertain. Naylor (2008) also argues of a lack of information on chat reference services provided to students but feels that the challenge of digital reference will be to convince those students “unable to cross the digital divide” that they will be at a disadvantage. The goal is to market chat reference as less social and more academic in nature, which requires a stronger relationship between reference staff and the student population. According to Backus (2004), digital reference services allow the distance learning community to access the same resources as students in a more traditional setting, which is the upside to technology, however serving remote users is not an easy task, and as Guenther (2001) argues that librarians must compensate for the lack of visual clues and must develop more effective skills in aiding remote users. While the issue of chat reference will continue to be debated, it is clear that users of reference services are open to change as long as the change is able to meet their needs.
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Bibliography


Abstract: As digital libraries evolve, questions arise particularly in the area of reference service provision. How intuitive can libraries be in the digital environment? What staffing patterns are required? Librarians must become key players in defining and creating the digital environment.

Annotation: This article is unique in that the author argues that the role of digital reference services is not to replace more traditional reference services, but rather to complement and enhance traditional reference services and the library’s collections by providing an accessible means for users to interact with information. The author, Byron Anderson, has a 25 year career with University Libraries at Northern Illinois University and has previously served as the interim dean of University Libraries. He is a frequent presenter and has published numerous scholarly articles in his field. He is a professor in the library’s bibliographic instruction program and specializes in assisting students and faculty with online computer searches.

Search Strategy: After logging into the Informaworld journals database to locate the full-text of the Backhus & Summey article, I decided to browse articles using the search term digital reference. I performed a keyword search for the entire site.

Database: Informaworld

Method of searching: Browsing and keyword search

Search String: digital reference


Abstract: Distant education offerings are growing at a phenomenal rate for academic institutions, creating new groups of library users that are remote from the main campus with unique library and research needs. Recent studies examining the needs of this unique and growing population note that reference and research assistance are key services needed. Many institutions have appointed or hired distance education librarians to help provide services to distant learners. They are often, however, one-person operations that function more as coordinators rather than full-service providers. Since the coordinator cannot provide all of the reference services alone, the key to providing these services for distant education students is to create and sustain good working relationships both in the library and with external entities. Offerings to distance students include phone reference and accessibility to online resources, plus virtual reference and often 24/7 services. This article will examine issues and experiences in bringing together different groups to provide reference services to distant learning communities.
It will also describe key relationships necessary for keeping distance reference services at an optimal level. (Excerpt from published abstract).

**Annotation:** This article is unique in that it focuses on distance education students and the need for digital reference services to market to this population group as they are entitled to the same library services as those available in a more traditional setting. Distance education students often feel cut off from the world of a traditional university experience, including library services; therefore it is important to compensate for this by building relationships through nontraditional services, such as chat reference services. Backhus and Summey argue the importance of the distance education coordinator is working with reference librarians to strengthen relationships between distance education students and library staff. Both Backhus and Summey are instructors at Emporia State University, Backhus is a Reference Librarian and Instruction Coordinator and Summey is the Head of Distance Learning Services, Collection Development, and Library Webmaster. The *Reference Librarian* is a quarterly, scholarly, refereed journal that focuses on a topic of current concern or practical value to the reference librarian.

**Search Strategy:** I selected LISTA because of its index to literature on library and information science. Since this was an initial search using this database I chose a keyword search.

**Database:** Library, Information Science & Technology Abstracts

**Method of searching:** Keyword search

**Search String:** digital reference AND user


**Abstract:** There are lots of ways librarians can get to know their users--even the ones who never come into the library. Some of the creative ways in which libraries can serve distance learners are discussed. (Excerpt from published abstract).

**Annotation:** This article is unique in that is focuses on marketing to remote users and their information needs. Guenther argues using digital clues such as users’ electronic paths, user keyword searches, and top entry pages in order to better develop the skills in order to meet remote user needs. Guenther argues that analyzing individual interactions is not sufficient but rather librarians must combine all interactions, including traditional, email, and telephone reference requests in order to develop an effective reference service. Guenther is the director for the University of Virginia Health System Web Center and the Health System Webmaster. Though she is not a librarian her arguments on remote users is invaluable to the future of digital reference services. Though *Computers in Libraries* is a trade magazine, Kim Guenther is an authority in her field and a credible source.

**Search Strategy:** This article was cited multiple times in the Backhus article and seemed relevant to the argument of the effectiveness of chat reference.

**Abstract:** The MIT Libraries enthusiastically implemented real-time online reference service in September 2001. After 15 months, Ask Us!—Live was suspended due to ongoing software problems. This article describes the four-part assessment of the service with recommendations for the future. (Excerpt from published abstract).

**Annotation:** This article is unique in that it is assessment of the MIT chat reference and the reasons why it was suspended after only 15 months of service. The key argument for suspension was limited use of the service both because users seemed to prefer more traditional forms of reference service such as face-to-face or self-help methods of research. Horowitz also argues against the implication that users prefer immediate information. In fact, when questioned most users preferred email reference after in person and did not expect a reference response within 24 hours of the request. On the other hand, users utilizing the chat reference service did not like waiting and questioned whether they should be doing something during the waiting period. All three of the authors work in reference and user services at both MIT and Worcester Polytechnic Institute and have written many scholarly articles on reference services. Horowitz is an assessment librarian in Administrative Services & User Experiences and often presents on library database and e-subscriptions assessments. *Portal: Libraries and the Academy* is a quarterly, scholarly, referred journal that covers current topics of interest to academic libraries such as library administration, information technology and information policy.

**Search Strategy:** This article was cited multiple times in the Pomerantz article and seemed relevant to the argument of the effectiveness of chat reference.


**Abstract:** Reference librarians have converted a significant portion of library resources to electronic format and are now beginning to move the reference interview itself to the electronic
environment. This study consisted of a survey carried out at two four-year public universities in the South Atlantic region. The survey inquired about university affiliates' awareness of, use of, and interest in reference services, with a particular focus on online chat reference (synchronous digital reference). Survey respondents reported strong prior use of face-to-face reference and a desire to use this service first when pursuing research topics. Awareness and use of the online chat reference service at each institution was comparatively low, but respondents forecasted the service would be among the most heavily used in ten years. (Excerpt from published abstract).

**Annotation:** This article is unique in its assessment of 276 email surveys of random students at four-year universities on their use of library reference services. Out of all the statistics collected, the most interesting was that the user group most likely to use traditional face-to-face reference over chat are undergraduate students, which is the group who some may find to be the most tech savvy. Johnson argues that the number of reference request has gone down and the main cause of this is due to online resources such as the internet. Johnson is the Head of Library Instruction at Washington State University and has published numerous articles on all aspects of information literacy education including assessing online information resources. The *RUSQ* is a quarterly, scholarly, refereed journal that provides information of interest to reference librarians, information specialists, and other professionals involved in user-oriented library services.

**Search Strategy:** I selected Social SciSearch because of its index to literature on information science. Since this was an initial search using this database I chose a keyword search.

**Database:** Social SciSearch [Dialog File 7]

**Method of searching:** keyword searching

**Search string:** s chat(reference


**Abstract:** The media choices made by high and low self-esteem Internet users were studied using web based methodology (*n* = 265). Participants were asked to rank four media (face-to-face, e-mail, letter, and telephone) in order of preference across four different communication scenarios designed to pose an interpersonal risk. The level of interpersonal risk posed by two of the scenarios (asking for a pay rise and asking for a date) were also experimentally manipulated by randomly allocating participants to a 25%, 50%, or 75% chance of rejection. Low self-esteem users (LSE) showed a significant preference toward e-mail communication compared to high self-esteem users (HSE). This pattern was reversed for face-to-face preferences. Similarly, a greater chance of rejection in a scenario led to e-mail being preferred to face-to-face communication. The results are discussed in light of both the strategic use of different media and the motivated Internet user. (Excerpt from published abstract).

**Annotation:** This article is unique from the others in that it focuses on email communication in general, however the implications of this form of communications on the use of chat reference is relevant in that it implies user motivation for using a service such as chat reference. Joinson
argues that many users of the internet chose email communication due to its impersonal and distant nature and because its anonymous nature allows one to control their own image. This form of social behavior could explain the excitement of some users for such virtual reference services as chat and email. Dr. Joinson is a professor in the School of Management at the University of Bath and has written numerous scholarly articles on the internet and its effect on user behavior. *CyberPsychology & Behavior* is a monthly, scholarly, referred journal that explores the impact of the Internet, multimedia, and virtual reality on behavior and society.

**Search Strategy:** I used the Web of Knowledge to locate articles that had cited the Westbrook article due to my interest in user behaviors in a chat environment. I hoped to find more articles that focused on this topic as opposed to librarian behaviors.

**Database:** Web of Science

**Method of searching:** Citation searching

**Search String:** n/a


**Abstract:** The Purpose of this study was to determine the effective behaviors of reference librarians during the chat reference interview, with particular emphasis given to whether the service users would feel more satisfied when librarians adopt the behaviors recommended in the revised "RUSA Guidelines for Behavioral Performance of Reference and Information Services Providers." The data analyzed for this study consisted of 422 chat reference transaction transcripts and corresponding user surveys obtained from a public library system that participated in a nationwide chat reference consortium. In six of the ten behavioral types observed, the users perceived the service as more satisfying when librarians demonstrated the behaviors suggested in the revised guidelines than when they did not. Five of these behaviors—receptive and cordial listening, searching information sources with or for the patrons, providing information sources, asking patrons whether the question was answered completely, and asking patrons to return when they need further assistance—were revealed as strong predictors of user satisfaction. These findings demonstrated that the RUSA behaviors are effective in increasing user satisfaction, suggesting that the guidelines can continue to be used as an effective tool for both staff training and service assessment in chat reference services. This report concludes with recommendations for further improvement of the guidelines and agendas for future research. (Excerpt from published abstract).

**Annotation:** This article is unique in that it examines the effective behavior of reference librarians and categories the behavioral types based on users satisfaction. There has been an abundance of information written on chat reference but I have been unable to locate many articles that focus primarily on a librarian’s behavioral performance. Dr. Kwon is a professor at the University of South Florida and has written numerous publications focusing on information behavior. The *RUSQ* is a quarterly, scholarly, refereed journal that provides information of
interest to reference librarians, information specialists, and other professionals involved in user-oriented library services.

**Search Strategy:** I selected Social SciSearch because of its index to literature on information science. Since this was an initial search using this database I chose a keyword search.

**Database:** Social SciSearch [Dialog File 7]

**Method of searching:** keyword searching

**Search string:** s chat()reference


**Abstract:** The profound impact of digital reference claimed by its proponents is overstated. Librarians tend to overvalue technology, assume its intrinsic value in improving library operations and services, and undervalue the human factor of librarian expertise and professional competence. Overstating the impact of trends within librarianship is a cyclically recurring phenomenon and the hype surrounding digital reference is a current example. In most libraries, the adoption of digital reference is not likely to be cost effective nor its utility an improvement on structures already in place and functioning well. Librarians have difficult decisions to make regarding the allocation of resources. The superiority of traditional reference approaches should not be gainsaid by misdirected emphasis on digital reference. (Excerpt from published abstract).

**Annotation:** This article is unique in its criticism of technology and identifies the driving force behind digital reference services such as chat to be the librarian’s love of evolving technology. Lauer and McKinzie argue that librarians overvalue technology and that the service of digital reference has failed to live up to librarianship expectations and that the argument of user behaviors having changed over time is misleading. They argue that while digital reference is an important tool, it will not take the place of traditional reference services as users want more personal interaction, not less. Lauer has been the Library Director at Messiah College since 1989 and McKinzie is a Social Science Librarian at Dickinson College. Both have been published numerous times. *The Reference Librarian* is a quarterly, scholarly, refereed journal that focuses on a topic of current concern or practical value to the reference librarian.

**Search Strategy:** After logging into the Informaworld journals database to locate the full-text of the Backhus article, I decided to browse articles using the search term digital reference. I performed a keyword search for the entire site.

**Database:** Informaworld

**Method of searching:** Browsing and keyword searching

**Search String:** digital reference

**Abstract:** Virtual reference in an Australian academic library was examined using qualitative and quantitative analyses of email and chat transcripts. Forty-seven chat transcripts and a matched sample of email were analyzed to examine questions of usage, question type, the reference interview and communication processes involved with these interactions. Results show that the usage of synchronous virtual reference in this sample is very low with a call rate of approximately one call for every four hours of availability. Email and chat show similar usage rates when hours of availability are taken into account. Chat enquiries tended to have higher proportions of research and reference enquiries. Email questions tended to have a higher proportion of administrative questions. Techniques of the reference interview are used far more frequently in chat than in email transactions. Chat and email transcripts were compared quantitatively using various metrics including duration and total word number. The average call length for a chat transaction was 22 minutes. Barriers to communication within a virtual environment are discussed. (Excerpt from published abstract).

**Annotation:** This article is unique in its argument of the traditional reference interview, which is argued to be important but unnecessary to. What Lee does find necessary is for the reference librarian to understand how much they really need to know about the question being asked before researching an answer. Though chat reference by nature lacks some of the elements that aid a reference librarian such as verbal and nonverbal clues of the user, it is necessary for both the librarian and the user to be active participants in order for the service to be useful. It is clear that librarians are divided on the issue of chat reference and its effectiveness. Lee, who is a Reference Librarian at Murdoch University Library, argues that the main reason to provide this type of service is to augment the skills of the reference librarian.

**Search Strategy:** I selected the LISTA database because of its index to literature on library and information science. Since this was an initial search using this database I chose a keyword search

**Database:** Library, Information Science & Technology Abstracts

**Method of searching:** Keyword searching

**Search String:** chat AND reference AND user AND behavior


**Abstract:** Academic libraries have experienced growing demand for 24/7 access to resources and services. Despite the challenges and costs of chat reference service and consortia, many libraries are finding the demand for these services worth the cost. One key challenge is providing and measuring quality of service, particularly in a consortia setting. This study explores the quality of service provided in one academic library participating in a 24/7 chat reference
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consortium, by assessing transcripts of chat sessions using in-house reference quality standards. Findings point to both similarities and differences between chat interactions of local librarians versus consortia staff. (Excerpt from published abstract).

**Annotation:** When read in conjunction with the other articles, this article is unique in its topic of online consortia and the issues that have led some libraries to join consortias that offer 24/7 chat reference services. Despite being able to meet the growing demands of immediate information needs, some academic libraries have begun to question whether online consortia can answer their users’ questions satisfactorily. If the quality of answers decreases how do libraries that are unable to supply 24/7 or after hours chat reference compensate, and what criteria do they use to judge the quality of the chat reference interaction. Meert is a Liaison Librarian at McGill University and Given is an Associate Professor in the School of Library and Information Studies at the University of Alberta. *College & Research Libraries* is a bi-monthly, scholarly, refereed journal that includes articles of interest to college and research libraries.

**Search Strategy:** I selected Library Literature and Information Science because of its index to literature on library and information science. Since this was an initial search using this database I chose a keyword search

**Database:** Library Literature and Information Science [Dialog File 438]

**Method of Searching:** Keyword searching

**Search String:** s chat()reference and quality


**Abstract:** Despite early reports of patron enthusiasm with chat reference, usage of this service has been disappointing at some academic libraries, including our own. To probe why students have not used our chat reference service more, we conducted in-depth focus group discussions with upper level undergraduates on our campus. We questioned participants-all nonusers of chat reference-about their research behaviors and their reference service preferences. Responses suggest users desire both a variety of reference services and more personalized reference services. We discuss implications for how we deliver chat reference. (Excerpt from published abstract).

**Annotation:** This article is in that is examines why users have been disappointed with chat reference services, as opposed to the many articles that examine users’ praise of the service. Dr. Sharon Naylor teaches at Illinois State University, and was the 2010 Milner Library inaugural recipient of the Outstanding College Research Award. Dr. Naylor’s work is nationally recognized with her significant contributions to four of the most important library reference titles acquired by academic libraries. The *RUSQ* is a quarterly, scholarly, refereed journal that provides information of interest to reference librarians, information specialists, and other professionals involved in user-oriented library services.
Search Strategy: I selected Social SciSearch because of its index to literature on information science. Since this was an initial search using this database I chose a keyword search.

Database: Social SciSearch [Dialog File 7]

Method of searching: keyword searching

Search string: s chat()reference


Abstract: The questions of whether chat reference service is beneficial enough to users to justify the costs of offering it, and how valuable it is to users in fulfilling their information needs, have been primary concerns for librarians providing the service, for library administrators managing the service, and for funding agencies paying for it. The present study combines a traditional evaluation of the user's satisfaction with the reference encounter, with details of the user's information use and the user's motivation for using the chat reference service. This evaluation study assesses the effectiveness of chat reference service in meeting users' information needs. (c) 2006 Elsevier Inc. All rights reserved. (Excerpt from published abstract).

Annotation: This article when read in conjunction with source two provides a unique look at the opposite end of the user satisfaction spectrum, and examines why the chat reference service is beneficial and can fulfill users’ needs. Dr. Pomerantz is an associate professor at the University of North Carolina at Chapel Hill and has written extensively on digital and chat reference. *Library and Information Science Research* is a quarterly, scholarly, refereed journal that focuses on the research process in library and information science, as well as research findings and, where applicable, their practical applications and significance.

Search Strategy: I selected the Social Sciences Citation Index in the Web of Science because I was looking specifically for articles dealing with Library and Information Sciences. Since this was an initial search using this database I chose a keyword search approach.

Database: Web of Science, Social SciSearch

Method of Searching: keyword

Search String: chat reference AND user perspective


Abstract: We live in a society that deals with information overload in a 24/7 environment. If information overload is defined as receiving too much information, reference overload may be
considered the opposite, wherein the library inadvertently offers too many relevant resources to its users. In the digital realm, the reference librarian's responsibility is to provide transparent, seamless access to the library's resources without overpowering the user with too many options. Suggestions and options for dealing with digital reference overload are discussed. (Excerpt from published abstract).

**Annotation:** This article is unique in its discussion of information overload and how reference librarians in a digital environment can handle this overload. Reichardt argues that most library collections have evolved to electronic collections which resulted in a decrease of in-person reference questions. The goal of the reference librarian is to bring the reference desk to the user’s home, hence providing reference services off-site, which is one way for the librarian to deal with information overload. Reichardt is an Information Services Librarian at the Science and Technology Library at the University of Alberta and maintains a weblog for engineering and scitech librarians. *Internet Reference Services Quarterly* is a quarterly, scholarly, refereed journal that highlights theoretical, research and practical application of internet-related information services, sources and resources.

**Search Strategy:** After logging into the Informaworld journals database to locate the full-text of the Backhus article, I decided to browse articles using the search term digital reference. I performed a keyword search for the entire site.

**Database:** Informaworld

**Method of searching:** Keyword searching

**Search String:** digital reference


**Abstract:** Four surveys conducted over a decade provide insights about changes that have occurred in academic library reference services due to new and rapidly evolving technologies. Surveys were sent to the academic members of the Association of Research Libraries four times during the past decade: 1991, 1995, 1997, and 2000. The surveys contained both open-ended questions to gather opinions and factual questions to measure what libraries offer. Libraries adopted digital information sources and services at an increasingly accelerated rate in the 1990s due to the availability of the Internet, in particular the World Wide Web. Digital sources have brought about changes in the physical environment of the reference room, in the type and range of resources available, and in the attitudes and expectations of reference librarians and patrons. The Web is changing what resources are searched, how results are distributed, how instruction is delivered, and relations with faculty. Quality service is still highly valued by reference librarians. The reference librarians surveyed think that as the reference environment has changed, it has helped them to provide better services to patrons. (Excerpt from published abstract).
**Annotation:** The research for this article is unique as it is based off of four surveys sent to the members of the Association of Research Libraries in 1991, 1995, 1997, and 2002 to assess the changes in reference services. Tenopir & Ennis argue that even though reference has evolved to a virtual environment, users still prefer personal interaction, and since digital reference is here to stay librarians must find the means to provide this personal interaction to satisfy user needs. Tenopir is a Professor in the School of Information Sciences at the University of Tennessee and Ennis is an Instruction Librarian at Georgia College and State University. The *RUSQ* is a quarterly, scholarly, refereed journal that provides information of interest to reference librarians, information specialists, and other professionals involved in user-oriented library services.

**Search Strategy:** This article was cited multiple times in the Backhus article and seemed relevant to this topic.

**Database:** MUSE

**Method of searching:** Citation searching

**Search String:** N/A


**Abstract:** *Purpose* – The purpose of this study is to examine the use of formality indicators in chat reference interchanges within the context of politeness theory, with its corollaries of face-threat and social relationship development.

*Design/methodology/approach* – This discourse analysis identifies the syntactic and content indicators and patterns of formality levels in a purposive sample of 402 chat transcripts (covering 6,572 minutes) from one academic year at a large, US, public university.

*Findings* – Syntactic formality markers include regular use of contractions, slang, sentence fragments, and non-standard punctuation as well as limited use of acronyms and abbreviations with rare use of emoticons. Content-based markers included apologies, self-disclosure, and expressions of extreme need. Use patterns are related to the level of responsibility assumed by the librarian as well as the interview stages.

*Research limitations/implications* – A limited data source and potential coder bias are the two limitations of this study. The research implications point to the need for chat reference librarians to assume greater control of formality nuances in order to encourage a more effective search for the user.

*Practical implications* – The fundamentals of politeness theory, particularly in terms of formality indicators, should be incorporated into staff training and behavioral standards for reference librarians. While future research is needed to determine the most effective means of employing
this theoretical construct, this study implies that a self-reflective, culturally sensitive use of the nuances of formality can enhance the user's experience.

*Originality/value* – This study is the first to systematically examine formality indicators in the context of politeness theory. The use of two coders, a full academic year's worth of data, and a substantial sample provide great depth. (Excerpt from published abstract).

**Annotation:** This article is unique in its study of 402 chat transcripts to examine formality indicators within the context of the politeness theory. In order for a chat reference to be beneficial, there must be effective communication between the librarian and the user, yet there must be a level of formality in order to establish a power relationship and level of expertise otherwise chat reference could be viewed as nothing more than social instead of academic. Like Joinson, Westbrook argues that there are certain types of individuals who prefer the impersonal nature of chat reference such as those who want to control their self-image; however as an important medium of college students, librarians must understand their users and find ways to assign formality levels by user group. Lynn Westbrook is an associate professor for the School of Information at the University of Texas and her research interests include the nature and quality of digital reference transactions and the role of mental models in reference work. The *Journal of Documentation* is a bi-monthly, scholarly, refereed journal that focuses on theories, concepts, models, frameworks and philosophies in the information sciences.

**Search Strategy:** I used the Web of Science database to see if I could locate additional articles on chat reference and user interactions.

**Database:** Web of Science

**Method of searching:** keyword searching

**Search string:** chat reference and user
Conclusion and Personal Statement

I have to begin this section by stating how much I enjoyed completing my annotated bibliography. As a previous Humanities graduate student, I became complacent in my searching skills and often stuck with MUSE or JSTOR and a simple keyword search to locate articles for my research. Now, I cannot help but wonder how different my research findings would have been had I been more familiar with information structures and search techniques as I am now. Searching is a complex action that requires not only knowledge but patience and an ability to think three steps ahead. What I enjoyed most about completing this annotated bibliography was the requirement to document my search strategies and search terms, which I felt helped me in my research, especially when a particular search was not going the way I had planned. Through this project I have learned that no search technique is beyond fine tuning and that as a student I am too quick to jump to a keyword search instead of trying other searching techniques such as a controlled vocabulary or author search. Even now, as I look at my completed annotations I am a little disappointed that I did not further expand my searching techniques and try something a bit more complicated, however it was refreshing to be able to complete this project without having to resort to any web resources, which have become so common among students nowadays. I felt that the writing of the literature review provided me an opportunity to confirm that all of the articles chosen for my bibliography where beneficial to the scope of this project, and not simply filler to meet the 12-20 required sources. The literature review also allowed me to show how the Joinson and Guenther articles, although not dealing specifically with chat reference, were relevant to the topic and provided insightful arguments regarding user behavior and the future of chat reference marketing. Finally, the literature review provided an opportunity for me to tie together all of the individual topics relevant to the scope of the project in a cohesive and
meaningful manner. Overall, I was pleased with the opportunity to use my learned search
techniques and knowledge of information structures to develop an annotated bibliography on a
topic I am very interested in, and I look forward to applying these foundation skills in my INFO
classes and my future career.

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I certify that:

• This paper/project/exam is entirely my own work.

• I have not quoted the words of any other person from a printed source or a website without
indicating what has been quoted and providing an appropriate citation.

• I have not submitted this paper / project to satisfy the requirements of any other course.

Signature ___Melissa Ormond______________
Date ___12-8-2010__________

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