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**THE REFERENCE LIBRARIAN IS NOW ONLINE!: UNDERSTANDING  
LIBRARIANS' PERCEPTIONS OF QUALITY CHAT REFERENCE USING  
CRITICAL INCIDENT TECHNIQUE**

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**Abstract**

*This article attempts to understand the librarians' perceptions of quality chat reference services of selected academic libraries in the Philippines. It aims to investigate the perceptions of librarians in terms of (1) chat reference definition; (2) similarities and differences of reference interview in chat reference and traditional reference; (3) advantages and disadvantages of chat reference and in-person reference; and, (4) successful and less successful experience in chat reference. Using the Critical Incident Technique (CIT), a survey of 20 library staff who perform chat reference services in UP Diliman and UP Los Baños was conducted. A total of 76 critical incidents were analyzed using MAXqda, wherein 61.84% were positive incidents. The success of chat interactions was dependent on librarians' knowledge of information resources and, a fast and stable Internet connection.*

**Introduction**

*Experience, not surprisingly, is a powerful indicator of attitude and opinion.”*  
– Joseph Janes (2002)

With the advent of the Information Communication and Technology (ICT) revolution in many academic libraries in the Philippines, there have been incessant developments in the provision of information services to its community and the way library users access information. More often than not, students and faculty members relied heavily on the Internet especially now that library resources are already accessible via the Web. ICTs have facilitated traditional reference services to become more efficient and effective in meeting generational user information needs (Tajer, 2009).

Reference services, as defined by Bunge (1999), refer to the “personal assistance provided to users in the pursuit of information.” According to Tajer (2009), there are two types of reference services, namely: direct reference services, which include information and instruction services where reference librarians provide answers to user’s question directly; and, indirect reference services, which include reference sources selection and evaluation as well as provision and publication of bibliographies and library guides. Although reference services

extend far beyond the walls of the physical library because of the development of new service models, such as roving reference, no reference desk, outreach reference, digital reference, etc., the functions remained to be constant and the same for all types of libraries. However, the tools are evolving as library constantly grows and the service is still personal although not necessarily through a face-to-face transaction. As a result of technology deployment in reference services, a number of academic libraries in Metro Manila have developed and started offering some forms of virtual or digital reference services (DRS) in 2008 (Ramos & Abrigo, 2012). According to Abu Bakar (2011, p. 492), “the academic libraries in the Philippines have made a big leap as far as offering virtual reference services to the users are concerned.” Currently, academic libraries that offer DRS, such as e-mail reference, chat reference, etc., are the following: Rizal Library of the Ateneo de Manila University (ADMU); James O’Brien Library of the Ateneo de Naga University (ADNU); University Library of De La Salle University (DLSU) Manila; University of Philippines Diliman (UPD) University Library; University of the Philippines Los Baños (UPLB) University Library; and, Xavier University (Abu Bakar, 2011; Ramos & Abrigo, 2012). Web 2.0 tools e.g. Instant Messaging (IM), web forms, social networking sites (e.g. *Facebook* and *Twitter*), Voice over Internet Protocol (VoIP), and podcast were utilized in the provision of DRS, which resulted to a significant increase in the number of reference transactions (Odsinada, 2010; Abu Bakar, 2011; Ramos & Abrigo, 2012).

Although chat reference using free IM applications, such as *GTalk*, *Yahoo! Messenger*, *Meebo*, etc. is still in its infancy, it has become increasingly popular to Philippines libraries. The integration of chat facilities in the reference services indicates that librarians have realized the importance and need of providing service to online users to meet their demands and needs for remote access and assistance (Meert & Given, 2009; Abu Bakar, 2011). Furthermore, chat reference allows librarians to provide synchronous reference service online via *Ask-a-Librarian* or *Chat with the Librarian*. At the early stage of DRS evolution, chat reference services were developed and made available by individual academic libraries. Nowadays, many libraries abroad are increasingly exploring collaborative chat reference (Pomerantz & McClure, 2004). According to Meert and Given (2009, p. 72), “chat consortia also push the boundaries of traditional reference hours and locations by stepping in when local librarians are busy with other patrons or libraries are closed.”

### **Objectives and Assumptions of the Study**

In the past decade, a substantial number of foreign studies on DRS have been published. Many studies have evaluated DRS to investigate the users’ and librarians’ attitude and perceptions, use and user satisfaction, quality, and impact of digital reference (Francoeur, 2001; Janes, 2002; Bullard, 2003; Lochore, 2004; Stoffel & Tucker, 2004; Pomerantz, Nicholson, Belanger, & Lankes, 2004; Özkaramanli, 2005; Bradford, Costello & Lenholt, 2005; Pomerantz & Luo, 2006; Kibee, 2006; Dee & Allen, 2006; Roesch, 2006; Radford & Kern, 2006; Radford, 2006; Profeta, 2006; Lewis & DeGroote, 2008; Shachaf & Horowitz, 2008; Granfield & Robertson, 2008; Van Duinkerken, Stephens & MacDonald, 2009; Shaw & Spink, 2009; Odsinada, 2010; Abu Bakar, 2011; Ramos & Abrigo, 2012). However, little to no research has been conducted that examines the librarians’ perceptions on quality chat reference in the

Philippines.

This article attempts to understand the librarians' perceptions of quality chat reference services of selected academic libraries in the Philippines. It aims to investigate the perceptions of librarians in terms of (1) chat reference definition; (2) similarities and differences of reference interview in chat reference and traditional reference; (3) advantages and disadvantages of chat reference and in-person reference; and, (4) successful and less successful experience in chat reference.

Researches on DRS evaluation show interesting findings, where academic libraries need to systematically and regularly assess chat reference services in order to improve the quality of user and librarians' experiences in new digital environment (Pomerantz & Luo, 2006; Roesch, 2006; Shachaf & Horowitz, 2008). In this relation, this study assumes that (1) librarian's feedback and suggestions are essential keys for a successful chat reference evaluation; and, (2) librarian's perceptions of quality chat reference services can be determined using critical incident technique (CIT).

### **Limitation of the Study**

This study is exploratory, with a limited and small number of subjects using non-random sampling. It has no claim for generalization of the results to a larger group of reference librarians in the Philippines. The CIT also has limitations, such as self-reported data, reliance on memories and subjective accounts of user's perceptions, etc. On the other hand, the CIT is flexible in data gathering since respondents recall and discuss their experiences in his or her own words.

### **Literature Review**

#### Definition and Forms of DRS

Academic libraries continue to provide traditional face-to-face reference while supporting their remote users with Web-based information services (Özkaramanli, 2005). Sloan (2002) defined DRS as the "provision of reference services, involving collaboration between library user and librarian, in a computer-based medium. These services can utilize various media, including e-mail, web forms, chat, video, Web customer call center software, VoIP, etc." DRS is also known as virtual reference, online reference, electronic reference, remote reference, Internet information services, live reference, and real-time reference (Özkaramanli, 2005; Shaw & Spink, 2009). Through the years, the definition of DRS slightly changed to adapt to the new and fast-changing technological innovations and increasing demands of library users. Digital reference can be summarized as a "reference service initiated electronically, often in real-time, where patrons employ computers or other Internet technology to communicate with reference staff" (Reference and User Services Association, 2004).

DRS can be categorized into two forms, namely: *asynchronous*, includes forms wherein communication between librarian and user occurs with a time delay or without a direct "real time" connection; and, *synchronous*, includes forms wherein communication occurs in "real-time" with "immediate" interaction. (Singh, 2004; Roesch, 2006; Mon, 2006, p. 10; Granfield

& Robertson, 2008). Libraries are using e-mail, Web form, *Chatterbot*, searchable Frequently Asked Questions (FAQ) or *Facebook* for asynchronous DRS. Some forms of synchronous DRS include simple/IM chat, extended chat, VoIP (audio-chat), reference via video, Web Contact Center, and collaborative reference. This review of related literature focuses on chat reference services using IM applications as one of the predominant DRS forms.

### Chat Reference Services

Chat reference refers to the services where the “core of the communication between the librarian and user is an exchange of text messages in real-time” using either IM or extended chat (Francoeur, 2001, p. 190). A recent study was conducted by Matteson, Salamon & Brewster (2011) to systematically review the researches on chat reference services. The authors note that chat service in libraries started for almost 15 years. In 2008, Maness linguistically analyzed 23 IM conversations and further correlated to user satisfaction with the reference interaction. He said that the language used by library users in chat environment is unique, “more spoken, informal genre and style” than any other written forms of communication (Maness, 2008, p. 31). Conversely, there has been a development of guidelines and best practices in the use of language. Interestingly, his findings show that librarians write more formally than students in chat reference transaction. Furthermore, the use of emoticons, computer-mediated-communication (CMC) abbreviations and CMC acronyms was not indication of user satisfaction.

With regard to user satisfaction, Pomerantz and Lou (2006) reported that users were quite satisfied with chat service. Similarly, results of the survey conducted by Stoffel and Tucker (2004) showed a high level of user satisfaction with DRS. Using willingness to return as an indirect indicator of satisfaction, Nilsen and Ross (2006) found that users are more than willing to return to utilize the DRS. Furthermore, user satisfaction was highest with completely answered questions, while referred questions as well as partially or not answered questions were far less satisfied than those with fully answered (Kwon, 2006). During the chat interaction, user satisfaction was significantly higher when librarians (1) used client’s name, (2) communicated receptively and listened carefully, (3) searched with or for the user, (4) provided pointers, (5) verified question was completely answered, and (6) encouraged the user to return (Kwon & Gregory, 2007).

Chat reference services present numerous benefits as well as issues faced by librarians. Nowadays, chat reference does not only allow librarians to answer questions from remote users, but it also enables them to demonstrate online databases with “co-browsing” software. Some of the issues and concerns cited by previous researches are the following: (1) technology, (2) staffing, (3) interpersonal communication in online environment, (4) quality of service within and between libraries, and (5) librarians’ perception on IM reference as a venue to answer complex or “serious” question (Meert & Given, 2009).

### Reference Interview in Traditional Reference and DRS

Effective provision of digital reference services entails a certain set of knowledge and skills. Lou (2007) identified three main categories of chat reference competencies, such as (1) core competencies for general reference, (2) competencies specific for chat reference, and (3)

competencies for general reference but highlighted in the chat environment. General reference competencies include “(1) reference interview skills, (2) knowledge of resources and searching skills, (3) ability to evaluate resources and services, (4) ability to assume the instructional role, (5) understanding of service policies, (6) understanding of customer service ethic, and (7) ability to derive professional satisfaction” (p. 205). Reference interview, which is the “heart of the reference transaction,” is essential to the success of interactions both in face-to-face reference and chat reference (RUSA, 2004). Katz (2002) identified four phases of a successful reference interview, namely: (1) analyzing the reference question; (2) conducting a good reference interview; (3) developing a search strategy; and, (4) delivering the information.

In face-to-face reference interviewing, librarians can use non-verbal information, such as eye contact, gestures, posture, facial expression and tone of voice in order to gauge the user’s age, interest, comfort level, time constraints, and apparent satisfaction as well as to show willingness to help them in their information needs. In this regard, librarians, designated and trained to provide reference service, must possess good reference interview skills in order to determine or verify the real information needs of the clients. Kovacs (2007, p. 4) notes that during the reference interview, the librarians must be able to elicit information the user requires, including the level, depth, and format of delivery “that they need and can use.”

The communication between the librarian and user is the most important element of the reference interview as it influences the results of the interview. To be successful in conducting reference interview, RUSA developed the “*Guidelines for Behavioral Performance of Reference and Information Service Providers.*” RUSA outlines that reference librarians should “(1) be approachable or welcoming; (2) show appropriate interest in the user’s question; (3) listen or otherwise pay attention; (4) clarify and verify by paraphrasing the user’s question or ask open guiding questions if needed; (5) formulate a search strategy and share it with the user if appropriate; (6) instruct the user in the use of recommended reference sources, if needed; (7) follow-up/check on the user’s satisfaction with the interview process as well as with the recommended information sources; and, (8) conclude the interview” (RUSA, 2004).

A number of studies on the librarians’ adherence to RUSA guidelines for behavioral performance were already conducted (Walter & Mediavilla, 2005; Ronan, Reakes & Ochoa, 2006; Kwon & Gregory, 2007; Shachaf & Horowitz, 2008; Van Duinkerken, et al., 2009). These studies compared RUSA reference interview guidelines with actual behaviors of librarians in remote reference transactions. The authors observed that the librarians’ compliance with RUSA guidelines for behavior performance in reference interview, specifically in the areas of listening/inquiring and searching, was low. In contrast, Kwon and Gregory (2007) note that RUSA behaviors are effective in increasing user satisfaction. They further suggested that the guidelines can be used as an effective tool for both staff training and service assessment in chat reference services.

### Librarians and Users’ Perception on DRS

Few studies investigated librarians and users’ perception of DRS. Mon (2006) conducted a case study of user perceptions of chat and e-mail reference in a university library setting, where he was able to identify the factors influencing users’ perceptions of DRS, their

expectations expressed in the transcripts, and judgment of the information-seeking process and outcomes. In 2002, Janes conducted a survey of reference librarians' experiences and attitudes towards the use of DRS. Most respondents strongly agreed that chat reference is more accessible and more interesting. In addition, they believed that digital technologies made reference services more accessible, more interesting, more challenging, and more fun. However, Steiner & Long's (2006) findings show that librarians doubt the capabilities of chat reference services as it presents a number of issues and concerns among librarians, such as negative experiences with commercial chat applications, staffing and hours, and difficulty adjusting to the communication style in IM environment.

Using critical incident, Özkaramanli (2005) interviewed 40 librarians to understand what they consider as successful and less successful chat reference interactions. Findings show that successful and less successful chat reference transactions were largely influenced by the attitudes and behaviors of both librarians and users. Moreover, librarians' knowledge base and skills play important role in the success of chat reference interactions. Interestingly, librarians believed that the interview in chat reference is similar to the traditional reference interview. Meert and Given note that defining a "successful" chat transaction is quite problematic (2009, p. 73). There is a question of whether evaluation criteria for traditional reference desk can be applied to chat reference transaction and whether librarians and users define success or "good service" in similar ways.

Librarians perceived chat reference as a good source for routine, short answer questions but not sufficient for dealing with in-depth, specialized reference questions that require complex reference interview. For many librarians, nothing can match the ability to work face-to-face with a patron in traditional reference transaction because chat reference lacks audio and visual clues and a "personal touch" (Özkaramanli, 2005; Steiner & Long, 2006).

### Digital Reference Evaluation

Librarians regularly assess quality DRS by reviewing transcripts, creating policies, and monitoring users' feedback. Different types of measurement for evaluation were also used in various studies, namely: 1) quality of the answers based on accuracy, completeness and adequacy of answers, referencing for sources quoted, response appropriateness to the user audience, opportunity for interactivity, and the level of instruction provided during the transaction; 2) process effectiveness and efficiency, e.g. services accessibility, response timeliness and duration, percentage of questions received, questions answered, and questions not answered, staff qualification, privacy policy, and marketing; 3) breadth and extent of the service including the allowed question types, style and scope of the answers, and knowledge base; 4) cost effectiveness which includes DRS session costs, the infrastructure and DRS software, and the impact on other library expenditures; and, 5) user satisfaction on the process and results using indicators e.g. accuracy, timeliness, staff behavior, etc. (Francoeur, 2001; White, Abels & Kaske, 2003; Bullard, 2003; Pomerantz & McClure, 2004; Bradford, et al., 2005; Pomerantz, Luo & McClure, 2005; Radford, 2006; Roesch, 2006; Shachaf & Horowitz, 2008; Shaw & Spink, 2009; Odsinada, 2010).

## Research Methodology

### Population

Subjects of this study included library staff who are performing chat reference services in UP Diliman and UP Los Baños. Both UP Diliman and UP Los Baños have been offering chat reference services in the last four years. In the Main Library of UP Diliman, there are 13 (seven full-time equivalent) college librarians at the General Reference Section, two from the UP College of Engineering Libraries, and six from UP Los Baños who are directly involved in answering reference queries through *Ask-a-Librarian* IM.

### Data Collection and Analysis

Letters of clearance to conduct the study were sent to the university librarians and head librarian of UP Diliman University Library, UP Diliman College of Engineering Libraries, and UP Los Baños University Library. Data were collected using Critical Incident Technique, “a qualitative interview procedure which facilitates the investigation of significant occurrences... identified by the respondent, the way they are managed, and the outcomes in terms of perceived effects” (Gremier, 2004, p. 66).

According to John C. Flanagan, who introduced the CIT in 1954, a critical incident is “any observable human activity that is sufficiently complete in itself to permit inferences and predictions to be made about the persons performing the act” (Radford, 1999, p. 70). Using CIT in reference services, librarians and users were asked to define what successful and unsuccessful reference transactions are and to explain their reasons for categorizing them as such. The CIT is also employed to gather and investigate the most unforgettable and impressive experiences of librarians while conducting reference interview. There are studies in the field of library and information services that employed CIT to assess and identify ways to increase effectiveness (Özkaramanli, 2005; Radford, 2006; Hughes, Williamson & Lloyd, 2007).

Flanagan identified five key stages of CIT, namely: (1) establishing general aims, which involves outlining the objectives and functional description of activity as well as the interview questions; (2) establishing plans and specifications, includes developing a detailed data collection method, identifying of critical incidents and recording of critical behaviors; (3) collecting data, involves developing of data collection instrument, and collecting, evaluating, and classifying critical incidents; (4) analyzing the data, includes transcribing, analyzing and categorizing data in an efficient manner; and, (5) interpret and reporting, involves presenting relevant results in a usable form (Özkaramanli, 2005; Radford, 2006; Hughes, et al., 2007).

Once permission has been granted, a total of 21 survey questionnaires were distributed personally or through e-mail. Subjects of this study were given ample time to answer the questionnaire. Questionnaires may be answered in English, Filipino or *Taglish* (a combination of Filipino and English). After two weeks, a total of 20 questionnaires were returned. Although respondents provided in-depth information in the questionnaires, personal interviews with the subjects were also deemed necessary to ask for clarification.

The survey and interview questions focused on librarians’ perceived definition of chat reference service; similarities and differences of in-person reference and chat reference;

advantages and disadvantages of traditional and chat reference services; successful and unsuccessful chat reference transactions; factors influencing the success of chat sessions; and the problems and issues encountered by them during chat reference interview. The accomplished questionnaires and interview data were coded and analyzed using *Max for Qualitative Data Analysis software* (MAXqda), a powerful qualitative data or content analysis software which allows the user to create and import interview data in any file format e.g. document, rich text format (rtf), PDF, etc., and then to edit, organize, and code the texts in order to create a hierarchical category system up to ten levels (Özkaramanli, 2005).

## Results and Discussion

### Characteristics of the Respondents

Majority of the respondents are female (13); 12 respondents have units in Master of Library and Information Science (MLIS); nine College Librarian I; ten (10) respondents spent 0-8 hours per week in providing chat reference; 11 respondents have less than one year experience of chat reference; and, six respondents have 1-3 years on overall traditional reference desk experience. There are two Information Specialists from UP Diliman and one University Researcher I from UP Los Baños included in this study, which indicates that non-college librarian can also perform chat reference services. The average number of hours in performing chat reference services is 12.44 hours per week. Respondents have an average of 2.16 years of chat reference experience while the average number of years on overall traditional reference desk experience is 8.05 years.

As shown in Table 1, there were four exceptional respondents who perform chat reference services for more than 17 hours per week. All male respondents have less than one year of experience in chat reference services. Almost all of the respondents with less than one year of chat reference experiences worked 0-8 hours of chat reference per week.

**Table 1.** Respondents Profile and Reference Service Experience

Respondent	Library	Gender	Hours per week chat	Years of experience in chat reference	Years of experience in traditional reference
L1	UP Diliman	Female	17-24	2-3	7-9
L2	UP Los Baños	Female	25-32	Less than one year	7-9
L3	UP Diliman	Female	9-16	3-4	7-9
L4	UP Diliman	Female	9-16	4-5	13-15
L5	UP Diliman	Male	9-16	3-4	4-6
L6	UP Diliman	Female	0-8	2-3	1-3
L7	UP Diliman	Female	0-8	1-2	10-12
L8	UP Los Baños	Female	0-8	1-2	1-3
L9	UP Los Baños	Female	0-8	4-5	13-15
L10	UP Los Baños	Male	9-16	Less than one year	4-6



L11	UP Diliman	Female	0-8	Less than one year	4-6
L12	UP Diliman	Female	9-16	1-2	7-9
L13	UP Los Baños	Female	0-8	Less than one year	1-3
L14	UP Diliman	Male	0-8	Less than one year	1-3
L15	UP Diliman	Female	0-8	Less than one year	10-12
L16	UP Diliman	Male	0-8	Less than one year	1-3
L17	UP Los Baños	Female	0-8	Less than one year	4-6
L18	UP Diliman	Female	0-8	Less than one year	16 onwards
L19	UP Diliman	Male	17-24	Less than one year	1-3
L20	UP Diliman	Female	33-40	Less than one year	7-9

### Definition of Chat Reference Services

One of the objectives of this study is to investigate librarians' definition and characteristics of chat reference. Librarians' perceived characteristics illustrate positive or negative attitudes towards chat reference services. Results indicate that all of the respondents gave more than one characteristics of chat reference. As shown in Table 2, these characteristics were classified into six general themes, namely: computer mediated communication (42); provide reference services to remote users via Ask-a-Librarian (11); online conversation between librarians and users (8); allows real-time interaction (synchronous communication) (7); available anywhere, anytime (no physical boundaries) (6), and use of Web 2.0 tools (5).

**Table 2.** Respondents' Chat Reference Characteristics According to their Chat Reference Experience

Characteristics of Chat Reference	Years of Experience in Chat Reference					Total
	Less than one year	1-2 years	2-3 years	3-4 years	4-5 years	
Use of Web 2.0 tools	3	1	1	0	0	5
Computer mediated communication	18	8	6	6	4	42
Provide reference services to remote users via <i>Ask-a-Librarian</i>	7	1	1	1	1	11
Online conversation between librarians and users	4	1	2	0	1	8
Allows real-time interaction (synchronous communication)	0	3	1	2	1	7
Available anywhere, anytime (no physical boundaries)	2	0	1	1	2	6
Total	34	14	12	10	9	79

All respondents defined chat reference as "a computer mediated communication" between librarians and users via the Internet. Majority of the respondents perceived that chat reference provides reference services to remote users via *Ask-a-Librarian*. It is worth mentioning that respondents did not supply negative characteristics in their definitions. Table 3

gives examples of definition of chat reference based from the questionnaires. It implies that respondents have a clear understanding of what chat reference is. Since this study is limited to defining characteristics of chat reference, it cannot determine the librarians' level of familiarity, understanding and adherence with the *RUSA Guidelines for Behavioral Performance of Reference and Information Service Providers* (2004) and the *International Federation of Library Associations and Institutions (IFLA) Digital Reference Guidelines* (2004).

**Table 3.** *Examples of Librarians' Responses Related to Chat Reference Characteristics*

<b>Computer mediated communication</b>
"A <b>computer mediated communication</b> that allows the library users to contact the library for information queries from any location via the internet in real time." (L3)
"Chat Reference Service is an <b>online communication process</b> wherein one person (client) asks for something, while the other person (giving the service) attends to his/her request or query." (L8)
"It is a virtual reference interaction between the users and the librarians." (L12)
"Chat reference service is an <b>on-line transaction</b> done by the librarian using the chatting sites, blogging sites and social networking sites to provide immediate, high quality, information at the time and point of need to students, faculty, staff and outside researchers." (L13)
" <b>Live online reference.</b> " (L7)
<b>Provide reference services to remote users via Ask-a-Librarian</b>
"Chat reference service is a chat service/facility in the library website. It provides <b>help, guide or tutorial</b> for the client's needs remotely. It uses either IM or chat software (made from scratch, shareware or free ware). The clients do not have to physical visit the library and ask the librarian, and the question and answer are done virtually in the Internet." (L1)
"It is a means in <b>responding the queries</b> of the users ... and outside the school base clients in a manner that they give, send a certain questions." (L10)
"It's a reference service wherein the library users need not go to the library and <b>ask a question/help</b> from a librarian, but instead, they may just open their PC or laptop at home or just be anywhere else, and just go to the library's website and then click the <i>Ask-a-Librarian</i> or chatbox widget on the site and start a conversation with a librarian." (L11)
<b>Allows real-time interaction (synchronous communication)</b>
"A reference service conducted online, often in <b>real-time</b> where patrons employ <b>computers</b> or other <b>Internet technology to communicate</b> with reference staff without being physically present." (L4)
" <b>Real-time reference</b> wherein users can get help <b>quickly and remotely.</b> " (L12)
<b>Available anywhere, anytime (no physical boundaries)</b>
"It is <b>extending library services outside</b> its four corners, which makes information access convenient to clients." (L17)
"Chat reference service for me is an online reference/inquiry service given to any clients <b>beyond the four walls of the physical library</b> . It transcend to space without boundaries, providing clients their need of the service of the library regardless of their location." (L9)

### Advantages and Disadvantages of Chat Reference Services

Respondents were also asked to enumerate their perceived advantages and disadvantages of having a face-to-face reference and chat reference services. As presented in Table 4, the perceived advantages and disadvantages of chat reference services were grouped into five categories, namely: (1) attitudes of librarians and users; (2) location and hours of the service; (3) technology and software; (4) reference interview/negotiation; and (5) use of resources and services.

Respondents identified seven out of 19 chat reference advantages were associated with the “attitudes of librarians and users” category. According to them, chat reference was also perceived by library clients as advantageous because of its inexpensiveness and efficiency in conducting research at home. For many library users, factors such as convenience, cost, quality of help, and speed are very important considerations in accessing information resources and services in various means (Ruppel & Fagan, 2002; Pomerantz & Lou, 2006; Ruppel & Vecchione, 2012).

Likewise, respondents believed that “timid students are given the chance to ask without the feeling of intimidation” (L13). In several cases, many students who are using the library do not usually ask for help from the librarian at the reference desk because they are shy or they feel stupid for not knowing already. Sometimes they are “worried that their question will be deemed trivial or silly” (Ruppel & Vecchione, 2012). Because chat reference offers anonymity to library users, it is now much easier for students to click the *Ask-a-Librarian* button and seek assistance from the virtual librarian, who is also anonymous to them, for immediate research services.

Furthermore, respondents value the advantage of chat reference as being accessible beyond the four walls of the physical library anywhere, anytime. For example:

“... where patrons employ computers or other internet technology to communicate with reference staff **without being physically present.**” (L4)

“An online reference/inquiry service given to any clients **beyond the four walls** of the physical library.” (L9)

“Easy access, available **anywhere, anytime.**” (L3)

Other advantages of chat reference include (1) ability to save chat transcripts; (2) allows serving more than one patron at a time; and, (3) allows multitasking. Respondents note that chat reference was “convenient to multi-taskers” where they can actually “do other things while waiting for the library users to reply.”

**Table 4.** Perceived Advantages and Disadvantages of Chat Reference Services

Advantages	Frequency	Disadvantages	Frequency
<b>Attitudes of Librarians and Users</b>		<b>Attitudes of Librarians and Users</b>	
Fast and convenient	1	Increases dependence on librarians	1
Increases comfort levels	3	Inconvenience for the librarians	1
Eliminates shyness (user)	1	Higher expectations from the librarians	1
Less expensive (user)	2	There's a question of trust	1
Less time to do research (user)	2	<b>Location and hours of the service</b>	
Easier to handle difficult clients by terminating the chat conversation	4	May serve non-UP users who are not primary clients	1
Creates relationship with other reference librarians through chat collaboration	1	Anonymity of the user / "faceless" user	2
<b>Location and hours of the service</b>		<b>Technology and software</b>	
Provides easy access anywhere	7	Time-delay problems	2
Allows 24/7 access	5	Dependence to electricity, devices, etc.	4
Allows librarians without borders	3	Requires speed in typing	1
<b>Technology and software</b>		Drop-off calls / disconnection problems	2
Ability to save chat transcripts	2	Proxy/connection problems	2
Allows serving more than one patron at a time	3	Bandwidth problems	2
Allows multitasking	4	<b>Reference interview/negotiation</b>	
<b>Reference interview/negotiation</b>		Challenges with question types	7
Less grammatical errors because librarian have time to edit before sending replies	1	Complex questions	(2)
Provides instantaneous user feedback	1	Receives irrelevant and trivial questions	(3)
<b>Use of resources and services</b>		Encounters joy chatters, hoax query	(2)
Allows use of the library resources outside the library	6	Communication difficulties	7
Meets the information needs of a new generation of users	1	Use of limited words in expressing the message	(1)
Provides easy links to electronic resources	1	Miscommunication between librarians and users	(1)
Ability to send requested materials via e-mail	1	No verbal communication	(5)
		Requires more user information before answering the queries	1
		Raises the issues of user information privacy	2
		Have time pressure	2

In terms of chat reference disadvantages, the most frequent category for librarians was “reference interview/negotiation.” Although respondents considered the interview in chat reference similar to the face-to-face reference services, they identified 19 disadvantages were related to “reference interview/negotiation” (see Table 4). They also mentioned that chat reference lacks audio and visual clues which affect the interpersonal communication between the librarians and online clients. To illustrate this category, respondents’ typical responses are the following:

“... possible **miscommunications** between reference librarian and the requesting client.” (L17)

“**Voice, eye contact and facial expression** are lost.” (L18)

“You cannot get **facial** and **verbal cues** from clients.” (L15)

“Clients sometimes ask **irrelevant questions** just to annoy or make fun with the reference librarians.” (L13)

“There is a bigger need to **get more information** such as the situation of the client and demographic.” (L14)

Respondents agreed that chat reference is good for answering simple, factual and routine questions but not for complex questions that require more time to look for materials. Since clients cannot see what librarians do while chatting, respondents believed that clients must be kept informed on the status of their inquiry. Unfortunately, this cannot be done when answering complex research type of question because sometimes librarians need to leave the reference desk to look for the right information resource.

The second most popular answers were related to “technology and software” category. This category includes dependence on electricity, devices, etc.; time-delay in receiving response drop-off calls/disconnection problems proxy connection; bandwidth problems; and, requires speed in typing. Below are quotations from the enumerated disadvantages of chat reference services:

“... can only be done only if there is **electricity, Internet connection**, and a **handheld device**.” (L10)

“If the **Internet connection is down**, you can’t give right away the requested data or information that they are needed.” (L1)

“Availability of the service relies on the presence of Internet connection and **power supply**.” (L17)

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### Advantages and Disadvantages of Traditional Reference Services

While librarians welcome the inherent features of chat reference, as concluded in the studies of Granfield & Robertson (2008) and Luo (2008), traditional face-to-face reference services still remain to be the first choice of the users in getting help in the library. Majority of the respondents mentioned that in-person reference allows non-verbal communication, offers personalized service, and accepts real query (see Table 5). Unlike chat reference, Kovacs (2007, p. 11) notes that “face-to-face reference interview communications include eye contact, gestures, posture, facial expression and tone of voice to convey information to the patron or for the librarian to gather information from the patron.” In view of this, the respondents were able to give clear and concise instructions on the use of online databases and WebOPAC. It was easier for them to explain the answer when the reference transaction was made face-to-face. They also felt that they get instant satisfaction, reaction or feedback from the users during face-to-face reference interview. More perceived advantages of traditional reference are shown in Table 5.

One obvious difference between the interview in traditional reference and chat reference is direct help and communication. Nine out of 18 respondents identified five disadvantages related to communication difficulties associated with “reference interview/negotiation” (see Table 5). These respondents believed that the interview in traditional reference is time consuming. Traditional reference may involve more personal interactions between librarians and users. In this case, librarians tend to discuss something not related to the query especially when the client is known to them. Hence, face-to-face reference lacks anonymity. Respondents also noted that non-verbal clues are sometimes ignored during the negotiation.

Respondents also pointed out some other disadvantages of using face-to-face reference service, as follows: challenging ways of handling difficult client; pressure is higher; users’ impression/perception about librarians; users are reluctant to go to the reference desk; and, librarians’ tensed feeling.

**Table 5.** *Perceived Advantages and Disadvantages of Traditional Reference Services*

Advantages	Frequency	Disadvantages	Frequency
<b>Attitudes of librarians and users</b>		<b>Attitudes of Librarians and Users</b>	
Clients are more understanding and courteous	1	User's impression/perception about librarians	1
Establishes librarian-user relationship	5	Users are reluctant to ask questions	1
<b>Technology and software</b>		Pressure is higher	2
Not dependent on technology	1	Librarians may have a feeling of tense	1
<b>Reference interview/negotiation</b>		Deals with difficult clients (demanding and hard to please type of users)	4
Librarians provide clearer instruction	1	<b>Location and hours of the service</b>	
Provides direct communication where users can see and hear the librarians	1	Serves one client at a time	1
Unnoticeable grammatical errors during conversation	1	Lack of anonymity	1
Much easier to explain the answer	4	Requires user's physical presence in the library	6
Receives real query (no hoax)	1	<b>Reference interview/negotiation</b>	
Provides instant users' reaction/feedback	1	Communication difficulties	9
Allows non-verbal communication	8	Noise	(1)
Have a "personal touch"	5	Distraction	(1)
<b>Use of resources</b>		Non verbal cues are sometimes disregarded	(1)
Locates the materials right away	2	Time consuming	(5)
<b>Knowledge base and skills</b>		Includes unnecessary conversation or topics not related to the real information	(1)
Enhances oral communication skills both librarian and user	2		
Users learn faster in face-to-face encounter	2		

### Successful and Less Successful Chat Reference Transactions

The primary objective of this study is to understand the librarians' perception of successful and less successful chat transaction using critical incident. In this regard, respondents were asked to recall and describe successful and unsuccessful chat transaction interactions. They were further asked to identify and explain the factors that made the interactions successful or less successful. The critical incidents were categorized as successful (positive, PCI) and unsuccessful (negative, NCI) using the MAXqda software. Of the total 76 critical incidents, 47 (61.84%) were successful and 29 (38.16%) were unsuccessful (see Table 6).

**Table 6.** *Distribution of Successful and Unsuccessful Critical Incidents (n=20)*

	Frequency	Percentage
Successful Critical Incidents (PCI: Positive)	47	61.84
Unsuccessful Critical Incidents (NCI: Negative)	29	38.16
Total Critical Incidents	76	100

Evidently, figures in Table 7 imply that respondents with more chat reference experiences tend to recall more positive and negative critical incidents than those with fewer experiences. An average of 3.80 critical incidents per respondent was recorded. Library staff with two to three years experience in performing chat reference services got the highest average of CI, which is 6.50 CI per respondent. Each respondent with less than one year of chat reference experience has an average of 3.0, which is the lowest CI average.

**Table 7.** *Distribution of Successful and Unsuccessful Critical Incidents According to Respondents' Years of Chat Reference Experience (n=20)*

Years of Experience	Respondents	Successful CI	Unsuccessful CI	Total CI	CI per Library Staff
Less than one year	11	23	10	33	3.00
1-2 years	3	7	6	13	4.33
2-3 years	2	7	6	13	6.50
3-4 years	2	5	4	9	4.50
4-5 years	2	5	3	8	4.00
<b>Total</b>	<b>20</b>	<b>47</b>	<b>29</b>	<b>76</b>	<b>3.80</b>



After coding the chat reference interactions, four themes emerged (see Table 8). Another interesting finding of this study is that for both successful and unsuccessful chat reference transactions, the largest numbers of responses were focused on “information resources” theme. Library staff reported that they had positive experiences when they provided adequate answers to users’ questions regarding use of online databases, specific library rules and regulations, and availability of resources in the library. Hence, for these respondents, the most significant factor in quality chat reference is the ability to provide accurate, complete and adequate answers. In order to provide a quality answer, reference librarians should exhibit the professional competencies essential for successful digital reference services. Lou (2007) identified some competency statements developed by various professional organizations and research groups, such as the RUSA *Professional Competencies for Reference and User Services Librarians* (RUSA, 2003), Digital Reference Education Initiative (DREI) 2004, and IFLA (2004) Digital reference guidelines.

**Table 8.** *Distribution of Successful and Unsuccessful Critical Incidents According Chat Reference Experience*

Coded Themes of CI	Years of Chat Reference Experience					Total CI
	Less than one year	1-2	2-3	3-4	4-5	
<b>Successful chat transactions</b>						
Information Resources	1	6	7	6	5	25
Rules and regulations	2	1	0	1	0	4
Online resources	4	1	0	1	1	7
Brief factual information	0	0	0	0	1	1
Document delivery	1	1	3	0	2	7
Reference interview/negotiation	1	1	0	0	0	1
Technical & software	8	6	3	0	1	18
Attitudes of librarians and users	0	0	0	0	1	1
User satisfaction	0	0	0	0	1	1
<b>Unsuccessful chat transactions</b>						
Information Resources	6	1	4	2	2	15
Rules and regulations	1	0	1	0	0	2
Reference interview/negotiation	2	0	1	0	0	3
Given information was incomplete	0	0	0	1	0	1
Technical & software	1	5	0	2	1	9
Drop off/sign out	1	4	0	2	1	8
Attitudes of librarians and users	1	1	0	0	0	2
Disappointed user	1	0	0	0	0	1

On the other hand, a good numbers of positive critical incidents were associated with technical and software. According to the respondents, most of the successful sessions happened during the days with Internet connection. Otherwise, chat session will be less successful.

Table 9 shows some positive incidents that are representative of information resources theme. Some positive incidents that respondents recalled were good examples of simple reference question but require more time to find the right answer. Some illustrates the importance of good reference interview, where librarians must be able to obtain information concerning the users' preferred format of delivery. In the case of L1, she was able to retrieve users' e-mail address from her college. Almost of all clients in positive critical incidents were appreciative and provided feedback to show their satisfaction with the chat reference services.

**Table 9.** *Typical Responses Related to Successful Chat Interactions*

<b>Location and Resources</b>
"A SLIS student is looking for a journal article. She is requesting form a document delivery. She has a class and she doesn't have time to locate whether we have the print copy of the journal. She gave her name, student ID and college but forgot to give her email address. I searched the exact title and volume, issue and year of the journal and found out that it was in west Law database. I searched WestLaw but the article is not within our subscription (year is not included). So, I called the Law Library if they have the print copy and luckily, they have it. Ms. XXXX scanned the document and emailed it to me. I called the SLIS library to ask for the email address of the student. I emailed the full text document to the student. On the next day, we chat again and she thanked me for sending her the document and her email address." (L1)
"It happened almost four month ago, a certain professor from our school inquired if we have a book about herbal medicines. So what I did is I sent to him the link of our OPAC and told him that he can check it there the title of the book related to his query since we have multiple collections with the same title. After two days he sent me a thank you message." (L13)
"A client inquired about the biggest and most reliable database for engineering particularly in electrical engineering and its standards. I provided her with three biggest engineering databases which I found reliable based from our library's usage statistics ... and from the library websites of prestigious institutions here and abroad." (L20)
<b>Reference Interview/Negotiation</b>
"A client who doesn't have any request inquiry and just wanted someone to chat with. I introduced myself and welcomed her to <i>Ask-A-Librarian</i> service but did not reply more upon finding out." (L17)
<b>Technical and Software</b>
"A client who's having trouble sending his article request message through the UPLB website's online form because of technical problems. I gave him other options on how to send his request." (L17)
<b>Attitudes of Librarians and Users</b>
"From an alumna <i>na kahit medyo nasungitan ako dahil bakit daw naka-online YM natin tapos wala naman sumasagot ay na-satisfy naman dahil na-trace nya ang isang dating staff from SLIS na matagal na nya hinahanap</i> and it turned out <i>na si XXXXXX lang pala yun. Thankful naman sya dahil thru our online chat nahanap ang isang dating kaibigan.</i> " (L4)

Respondents revealed the elements/factors that made these successful chat reference transactions, as follows: (1) question is clear and complete; (2) ability to do multitasking; (3) have knowledge and skills in using chat facility; and, (4) attitudes of librarians and users.

Librarians' attitudes include interest in helping the client, friendly and approachable, patience and diligence in clarifying the reference question, as well as willingness to collaborate with librarians from other institutions. Users' attitudes, on the other hand, include persistent, conversant, very cooperative and patient during the reference interview and while waiting for the information they needed. Özkaramanli revealed that "attitudes of the librarians and the users played an important role in the librarians' perceptions of interactions as successful and less successful," (2005, p.79), which is affirmed by the findings of this study. Furthermore, successful CI responses imply that the success of the transactions is also depended on user's positive attitudes.

With regard to less successful, respondents reported that they had unpleasant experiences with providing information services through chat reference when they could not find the books or information they were looking for; had to entertain the walk-ins at the CD-ROM/Internet counter while chatting; had drop-off calls/disconnection problems; there are power interruptions due to heavy rains; and, users were disappointed because the staff failed to acknowledge his/her presence via the *Ask-a-Librarian* chat facility.

The respondents also talked about challenges with the types of questions asked by the online users. Sometimes they received questions where answers cannot be found in the library. Thus, library resources are not sufficient to meet users' current needs. Few respondents considered that chat reference is deficient with regard to answering complex questions given a limited time. Other factors influencing the negative critical incidents were as follows: (1) miscommunication between librarians and users; (2) interruptions caused by walk-ins; (3) user information privacy issues; (4) proxy/connection problems; (5) software problems; and, (6) librarians from other libraries are off-line.

#### Problems and Issues in Chat Reference

Thirteen out of 20 respondents mentioned that many of the difficulties faced by the library staff in providing chat reference services are associated with technical and software and question types. Both networks of UP Diliman and UP Los Baños have limited bandwidth. Libraries in UP Los Baños are frequently experiencing Internet connection interruptions, which affect the offering of digital reference services. Further, few respondents said that some clients do not know how to frame their questions. Some were requesting for journal articles but do not include the complete bibliographic information. Library staff considered staffing requirement as important as the Internet connections issue. The two libraries do not have enough reference librarians to entertain clients both in-person and chat reference interactions.

**Table 10.** Typical Responses Related to Unsuccessful Chat Interactions

<b>Information Resources</b>
"A client was asking for the business section of the library. I greeted her and asked his/her user information. I went to the CD-ROM area after. There was no one around to man the area so I had to be there. When I came back to check the reply, the client already signed out." (L1)
"A researcher from the House of Representatives inquiring if we have a list of statutes that were declared unconstitutional by the Supreme court. We don't have that so I just refer ( <i>sic</i> ) her to the College of Law." (L3)
"The query is from XXXXX from College of Education. His query is about reference materials on mathematics in Singapore. I only found 2 related books using the WebOPAC and not the exact the title that he needs. He gave me a link of his other recommend titles." (L6)
<b>Reference Interview/Negotiation</b>
"Client inquired as to who the "head of the Main Library" is. Reference librarian replied the we have a University Librarian that oversees the sections in the Main Lib. Reference librarian further responded by giving the link to the write up in the MainLib blog. User fails to reply after librarian asks for more questions." (L14)
"The given information was incomplete." (L3)
<b>Technical and Software</b>
"...when we don't have the material that she/he wants, or the computer hang, and lastly when the visitor just signed out." (L5)
"One time a guest with inquiry on online journals requesting for an article to be searched on ScienceDirect, at the middle of my searching the connection hang, and I appeared offline, when the connection resumed and I went back to the guest I'm serving, he is no longer online." (L8)
<b>Attitudes of Librarians and Users</b>
"Not my personal experience but by a colleague. She received a not so "good" criticism by ( <i>sic</i> ) a client, short of saying that her manner of exchanging messages is far way below acceptable standards." (L7)
"Received three chat transactions at the same time. One of them logged out after saying "she was disappointed" I was alone at that time." (L18)

### Chat Reference Service Improvement and Management

When the library staff were asked about their suggestions to improve the chat reference services, they pinpointed the significance of training for chat reference and more stable Internet connections (see Table 11). Staff trainings would help the information providers to acquire and improved technical skills and knowledge for chat reference.

**Table 11.** Librarians' Suggestions for Service Improvement and Management

Suggestions	Frequency
Conduct training on chat reference services	10
Improve Internet connections	5
Develop policies and guidelines on chat reference services	4
Use chat applications with archiving and searching functions	2
Increase subscriptions to online databases	1
Assign more librarians at the Reference Desk and Virtual Desk	1

### Conclusion

Many academic libraries have recognized the potentials and benefits of developing digital reference services not only in developed countries in Asia but also in the Philippines. To make these services relevant and successful, it is imperative for the libraries to systematically and regularly evaluate its quality. The premise of this study was primarily based on the assumption that "librarians' perceptions provide important information on evaluation and ways of improving the quality of digital reference services" (Özkaramanli, 2005). Using the CIT, this study was able to capture the librarians' perceptions of quality chat reference services through their most memorable successful and less successful critical incidents. Many of the library staff believed that the reference interview and questions received in chat reference were similar to in-person reference. The success of chat interactions was dependent on librarians' knowledge of information resources and, a fast and stable Internet connection. Chat reference is not a perfect reference service though; library staff identified some of its deficiencies. Together with traditional reference, chat reference could provide alternative venues for reference services for those clients who prefer to work outside the library.

### Future Directions

Findings of this study imply more research needs to be conducted in the field of Philippine librarianship, such as an exploratory study of librarians' level of familiarity, understanding and adherence with the RUSA and IFLA guidelines for digital reference, an extended study on librarians' and users' perceptions on quality chat reference, and user awareness and satisfaction of chat reference.

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