

From a distance: Robust reference service via instant messaging

Reference service via instant messaging (IM) has significant potential to benefit distance learners. There has been wide experimentation with IM to expand reference services in libraries across the US, with mixed results. Concern has been expressed that IM cannot provide the same reference experience as face-to-face interactions. One academic library, California State University, San Marcos (CSUSM) has provided local reference service via IM since 2007 and the authors will present evidence that IM can provide distance learners, as well as other library users, with greater access to librarians, while fostering high user satisfaction.

Introduction

Distance learners enrolled in fully online classes at accredited higher education programs are expected to achieve the same student learning outcomes as traditional face-to-face courses. Many librarians find that many students, whether online or face-to-face, have poor information literacy skills, making it difficult to adequately complete research assignments. When tasked with research assignments that require use of scholarly and other literature, many students cannot effectively find, evaluate, or ethically use the information that they need. These students often must seek research assistance through library reference services to complete these tasks.

Traditional reference services are available in order for students to get research help from a librarian-in-person, and by phone or email. However, these methods to contact a librarian can be problematic for distance learners due to various reasons. For instance, distance learners may have difficulties traveling to the physical library for in-person librarian help due to geographical distance or conflicts in their schedule. Consequently, distance learners often rely on phone or email reference to get research help. However, in-depth reference questions over the telephone may be difficult for librarians and students who cannot simultaneously view a shared computer screen, especially when using electronic databases to locate articles. Email reference can also be difficult for this same reason, but with the added drawback that email is asynchronous by nature. It is difficult for librarians to assist patrons during their point of need and may require a great deal of time-intensive back-and-forth communication in order to conduct a reference interview. Since all of these traditional reference services cannot fully meet the need of distance learners, the authors propose that instant messaging (IM), or live chat reference, is a more robust way to support distance learners in their research needs.

IM reference is becoming more and more common in academic libraries as an additional access point for users to contact librarians. Some libraries participate in cooperative chat reference through consortia, such as QuestionPoint (an OCLC product), which allows students to work with librarians from other institutions 24 hours a day/7 days a week. Others offer local chat reference through the use of IM software that is either free (e.g., Meebo, AIM, Trillion, etc.) or low-cost (e.g., LibraryH3lp) and is administered by librarians at the institution. Some libraries offer a combination of both local and consortia chat. With the increasing availability of IM at academic libraries, opportunities are arising for librarians to work with distance learners in ways that were previously difficult due to the limitations of traditional reference service contact methods.

Through the use of chat and screen sharing software (e.g. Jing or co-browsing with QuestionPoint), librarians can provide synchronous research help to students that may be much more efficient and effective than email or phone reference. The authors argue that IM

technology allows libraries to have a robust virtual reference service that provides quality research help to distance learners at their point of need. The case study from CSUSM will discuss the successful implementation of a pilot IM reference service and the data leading to the IM access point becoming permanent.

Literature Review

The existing research about IM in higher education, academic librarians and virtual reference strongly supports the creation of an IM reference program/service. IM is successfully being used in higher education due to the communication preferences of college students and many academic libraries have adopted this mode of communication for reference services. The literature review focuses on how IM is generally being used in higher education and by college students, previous library virtual reference efforts, and how IM is currently being used in academic libraries' reference services.

IM, higher education and college students

Studies from 2002, 2004 and 2005 all clearly show that IM is being used by a large and significant number of college students¹. Wilson's 2008 review of Lancaster, Yen, Huang and Hung provides a more current analysis of usage and attitudes regarding IM and email, albeit in a small-scale study². Their findings support those of previous years that significant numbers of college students use IM, perceive IM as a means to communicate to friends, and email mainly as a means to communicate more formally (i.e., to instructors.) Existing research indicates that thoughtful integration of IM into college courses can improve students learning and overall experience in the course³.

IM in academic libraries/virtual reference services

The first reports of IM/chat usage in academic libraries appear in the literature in 2002. However, it is only in 2006 that a significant increase in research about IM in this environment appeared, with the majority appearing in 2008. This could be due to a number of factors including an overall greater familiarity and use of IM among librarians and college students, improvements in IM software, or other variables. To date, only one article by Luo has been identified providing a systematic review of the existing literature on evaluation and assessment of IM reference services. Luo provides valuable details on how libraries are analyzing chat transcripts to identify types of questions, user patterns and perceptions, quality of assistance provided, and practices/perspectives of librarians who are using the technology⁴.

There are many case studies detailing how libraries have implemented IM and discussing initial user feedback⁵. Implementations varied, with many institutions using consortial chat programs as an impetus. Virtually all articles mentioned low levels of use, but few provided significant discussion of why this was the case. Cummings, Cummings and Frederiksen's article focused analysis on the low levels of use of IM on their campus provides some insight (user preferences, technological problems, a general perception that IM is not for "formal interactions"), but the authors also point out that the reasons can indeed be "manifold"⁶. Wan, Clark, Fullerton, Macmillan, Reddy, Stephens and Xiao provide the most longitudinal investigation of IM reference program by analyzing transcripts from 2005 to 2007⁷. Contrary to other implementation descriptions, the authors concluded that IM was central to the delivery of the

library's reference program. Chapman and Del Bosque's description of the implementation of a system-wide chat reference program included findings of librarians' concerns regarding true efficacy of chat and low levels of usage, which indicated chat does not really translate into greater access/utilization of librarian assistance⁸. Some research focused on analyzing transcripts to identify instructional opportunities; identifying patterns of formality; determining where and how to provide access to IM; and determining how to increase usage of IM reference⁹. Arnold and Kaske provide the only analysis of accuracy, question type, and source of question of an IM reference service the authors have found in the literature¹⁰. Their conclusions were noteworthy, in that roughly 90% of all questions were answered accurately and about 40% of all users were students, and 40% of questions were regarding policies and procedures regarding library use.

Several articles do focus specifically on *Meebo*, the embedded IM software that was used in the CSUSM pilot project¹¹. Breitbach, Mallard and Sage analyzed not only Meebo, but how other IM software addresses the problems encountered in an implementation approach that closely mirrors that of CSUSM's¹². Sessoms and Sessoms' study is similarly notable in that the authors created their own IM software, LibraryH3lp, that specifically addresses some of the shortcomings of Meebo software in the library reference setting¹³.

IM reference and distance education

Clearly, there is interest in IM in higher education and within academic libraries. Being able to provide robust reference services using IM has definite implications for distance learners. Casey provides a full history of reference services for distance learners¹⁴. While this article does discuss IM, the article was published in 2004 and does not discuss current implementation, available software, and assessments. Burich and Devlin, as well as Reeves, provide examples of IM reference services that are developed for, and marketed to, distance learning students¹⁵. Kern's discussion of the particular needs of distance students and library services included specific suggestions on how to make IM/chat reference more helpful for this population, such as the need to reconsider reference policies that place limits on how and why users can utilize "virtual reference services", including IM/chat¹⁶.

Case Study

California State University, San Marcos (CSUSM) is a campus of 9,500 students, many of whom take both traditional (i.e., in-person) courses, as well as online courses. In addition to classes offered on campus and online, classes are also offered at nearby satellite campuses, approximately 27 miles away. While there are a limited number of students at satellite campuses, there is a great need for distance services.

CSUSM is also considered a commuter campus, with only one small campus housing option that is geared towards first year students. While many students live in the surrounding communities, a number of students commute 40 miles or more, such as from San Diego to the south and Temecula/Southwest Riverside to the north. Commuter students often coordinate their classes so that they only have to drive to campus one or two days a week and these students may never step foot in the physical library building. Anecdotal evidence suggests commuter students tend to conduct their research at home and have, in the past, relied heavily on email and phone to contact reference librarians. Because of this gulf between students and librarians, it was vital for

CSUSM to develop a robust virtual reference program in order to continue comprehensively support student learning.

From Spring 2008 through Spring 2009, the Information Literacy Program (ILP) librarians, at the CSUSM Kellogg Library, piloted a program to introduce IM reference using the free, web-based IM software called Meebo (www.meebo.com). The ILP librarians were also participating in consortial virtual reference through QuestionPoint, however, few of CSUSM students were utilizing this service. Local IM reference was introduced as a way to reach our students directly when they needed assistance during regular reference hours. A Meebo chat box, also known as a IM widget, was placed on the CSUSM Library's Home Page, as well as on the Ask A Librarian webpage. Using the Meebo widget, students could easily see when a librarian was online and get instant research help simply typing their question into the chat box.

During the IM pilot period, ILP librarians were also testing the use of screencasting, or the recording of a computer screen and mouse movements, in reference interactions. By adding screenshots or video clips to IM and email reference, the user has a picture of the answer to their reference question. Students noted high levels of satisfaction when this visual component was used during the IM reference interaction.

Results

During the course of the pilot period, librarians at CSUSM collected and analyzed usage data, including: the total number of chat reference interactions, types of questions asked, interaction duration, and an IM user satisfaction survey. This data was used to make decisions about whether to formalize local IM access and how to staff the service based on peak usage times. Since the introduction of the chat reference pilot, there has been a high use of IM reference service and initial data indicate strong levels of satisfaction among chat reference users¹⁷.

Total Reference Usage

During the 14-month pilot period of IM reference, overall librarian reference statistics increased, in comparison to the previous two years (see Figure 1, Librarian Reference Interactions). Compared with the traditional methods to contact librarians for reference assistance (i.e., in-person, email, and phone), IM reference interactions comprised 35% of total interactions in Fall 2008 and 41% of interactions in Spring 2009. Interestingly, the total number of traditional reference contact methods decreased after the implementation of IM, but total reference interactions, including IM, increased.

IM usage by time/date

At the beginning of the Meebo pilot, ILP librarians presumed that the use of IM reference would mirror that of traditional reference, with the highest use during the weeks prior to midterms and finals. Data indicated a parallel in terms of the busiest periods, with the highest demands for IM reference usage occurring one to two weeks prior to midterms (Weeks 7 and 8) and finals weeks (Weeks 13 and 14) for both semesters (see Figure 2, Interactions by Week). Usage patterns varied by time of day (see Figure 3, Interactions by Reference Shift). Individual librarian reference shifts at CSUSM were divided into four blocks on weekdays: 8-11am, 11am-1pm, 1-

4pm, and 4-7pm. The reference shifts with the heaviest IM use were the morning 8-11am and afternoon 1-4pm blocks, however this does not mirror in-person patterns, with the heaviest reference use from 11am-1pm. Data regarding usage by day of the week was inconclusive.

Question Types

Through chat transcript analysis, IM interactions were categorized by question types, including: research, quick reference, directional, technological, or other. Question classification methodology was adapted from Breitbach, Mallard and Sage to categorize and define types of reference questions¹⁸.

Research questions were defined as inquiries that required multiple sources of information or search strategies (e.g., “I am doing a research paper on stem cell research and I need books and scholarly articles”). Quick reference questions were defined as questions using a single information source or having a finite answer (e.g., “I am looking for a book on global warming” or “What is the melting point of barium?”). Directional questions involved asking the location of items or places in the physical library or on the website (e.g., “Where do I go to access reserve books?” or “What is the limit of books I can check out?”). Technological questions were any question related to the use of technology to access library resources (e.g., “Can I access library databases off-campus?” or “How do I get electronic Interlibrary Loan articles?”). The “Other” category was used for any interaction not covered in the other categories, including non-library/campus related questions (e.g., questions about the bookstore) and non-CSUSM/community related questions (e.g., inquiries about Meebo’s capabilities from librarians at other institutions or MLIS students).

During the pilot period, 74% of questions answered were classified as reference questions, broken down as 36% research questions (or in-depth reference) and 38% quick reference questions (see Figure 2, Types of Reference Questions Answered). Questions that could be answered by non-librarians, or required referrals to appropriate services, included directional (19%), technology related (4%) and other (3%).

User Satisfaction Survey

In addition to analyzing usage data, the authors conducted an optional user satisfaction survey using a Survey Monkey link at the end of transactions. The survey was conducted between May 2008 and June 2009 (n=134). 81% of respondents were students and the remaining users were faculty, staff, community, or “declined to state”. Users were asked about IM reference service satisfaction, the recommendation level of IM reference to a friend, and librarian contact method preferences.

100% of survey respondents strongly agreed or agreed that they were satisfied with the service they received while chatting with a librarian (see Figure 5, Chat Reference User Satisfaction Survey). None of the respondents were neutral, disagreed, or strongly disagreed with the satisfaction statement. 85% of respondents strongly agreed that they would recommend chatting with a librarian to a friend.

When asked whether they preferred chat reference to the traditional reference desk, 69% of survey respondents strongly agreed, 18% agreed, and 12% were neutral. Only 1% of

respondents disagreed with this statement. These results suggest that a large majority of our library users prefer to use IM to contact a librarian instead of asking questions in-person, or using phone or email. Although there may be concerns from librarians that using IM is "not the same" as working with students at the physical reference desk, this was not reflected in users' survey responses.

Discussion

The librarians at CSUSM decided to pilot IM reference services as a way to provide research help to students independent of physical requirements, while striving to create faster response times than those achievable by email and more visual interaction than is possible over the phone. CSUSM librarians suspected that the service would be popular, based on anecdotal evidence that many students today are familiar with, and frequently use, IM in their daily lives. In 2004, it was estimated that four in ten adult (which includes college students) Americans who used the Internet regularly used IM¹⁹. Also, prior to the Meebo pilot, the authors were using embedded IM widgets on individual subject and course guides, and had many students contacting them for research assistance, which could have contributed to knowledge of the service prior to the chat reference pilot.

CSUSM is a commuter campus and many students either cannot or choose not to go to the physical library for help as much as students on more residential campuses, and as a result they are choosing chat reference over other modes of contacting a librarian. However, the authors encountered instances of students chatting with librarians while they were in the physical library building, suggesting that ease of contact created by embedded IM contributes to students' information seeking behavior. Another explanation for the embracing of IM reference services may be based on library users' growing preference for using IM technology in other areas of their lives, which therefore becomes their preferred method to get reference help. Being able to receive instant research assistance with anonymity may also reduce library anxiety and encourage students to seek assistance. Further research is needed regarding why library users choose to use IM reference services and whether or not users who would not normally use the physical library or consult librarians via email or phone choose to seek reference help via IM.

Although CSUSM librarians expected that students would utilize IM reference services, the actual usage was much higher than what we had anticipated: 35-41% of total reference interactions were conducted via IM. Our hypotheses to explain the high use of IM include marketing and user preferences. The prominent placement of our IM chat box on the front of the library homepage allows users to instantly start chatting with a librarian. Additionally, the design of the chat box was visually appealing and easy to find on the page. With a decline in the number of traditional reference desk interactions and a large percentage of IM in the total amount of reference interactions during the pilot period, our reference coverage justifies availability during regular reference hours via live chat. Further study is needed to test our hypotheses and identify trends in modes of contact. Additionally, we will be continuing our data analysis of IM usage in order to best staff the physical and virtual reference desks.

Prior to IM chat implementation, we were unsure of what types of questions we would be receiving. There was concern that the majority of questions would be non-reference questions, especially those that are considered directional or non-library questions. Arnold and Kaske

reported that only 3% of questions received via IM were research questions and significant numbers were directional and inquiries to library policy and procedures²⁰. So, the CSUSM librarians were surprised that the large majority of the questions were both quick reference and in-depth research questions, which justified making IM reference a permanent service at our institution (see Figure 4, IM Reference Question Type). The authors hypothesize that the CSUSM librarians have received a large percentage of reference questions via IM because of the strong information literacy program that is integrated into the curriculum at CSUSM. Statistics on appointments with individual subject librarians show that most students seeking research help have had previous contact with a librarian (i.e., having a class session taught by a librarian). Further study is needed to determine whether students using IM to contact librarians have had previous contact with librarians through such instructional sessions.

CSUSM's overwhelmingly positive response from the user satisfaction survey was also surprising, although existing research had indicated that users were satisfied with using IM for reference. These results contradict anecdotal evidence of librarians and staff who still do not feel IM reference can provide a good user experience. Concerns from librarians about the value of IM are valid and ought to be considered, but a growing body of data indicates that users like using IM to access research help. Cummings, Cummings and Frederickson sum up the issue: "What price will the library pay for not providing a service that users find very advantageous to them?"²¹ Particularly with distance students, services and assistance that can increase their engagement with their (virtual) campus community will most likely improve their learning experience. By not providing IM reference to students, the library may not be reaching students during their point of need or at all.

One aspect of the IM reference service provided that was not formally included in the scope of the data collection was the use of screencasting software, such as Jing (<http://www.jingproject.com>). Using Jing, CSUSM librarians were able to create on-the-fly videos and images that allowed an easy and quick way to "share your screen" with the student without a requirement of additional software downloads. The authors believe that screencasting significantly adds to the interactive nature of the reference interview, greatly improves the speed at which the librarian can provide research assistance, and, most importantly, significantly increases the speed at which the user can determine the usefulness of the instruction. Manuel found that significantly more students completed an assignment in which the instructions were provided in pictures, than an assignment in which only text instructions were provided²². Part of Manuel's rationale for this approach was Miller's assertion that "...the average student retains only ten percent of what s/he reads but twenty to thirty percent of what s/he sees."²³ This is also supported by Graves and Desai's study of co-browsing in chat reference interaction²⁴. They found that co-browsing allows for different learning styles, which leads to higher learning retention²⁵. While co-browsing is a synchronous technology and screencasting asynchronous, the findings in this study also support the use of screencasting in chat interactions. Furthermore, screencasting may help address visual barriers that are not present in face-to-face reference²⁶.

Using evidence from the IM pilot period, the CSUSM librarians made important decisions about how to offer chat reference. Since the end of the pilot, the CSUSM Library decided to end participation in consortial IM with QuestionPoint because of its low usage by CSUSM students. IM/chat reference with the CSUSM librarians will be offered as a permanent access point simultaneously to the traditional reference desk (in-person, phone, and email). Also, after

identifying times of peak IM reference usage, librarians doubled staff IM reference before midterms and finals weeks. Because of the high usage of IM reference interactions, CSUSM librarians implemented the philosophy that no contact method was a priority over others (i.e. in-person patrons are not served before IM patrons).

Another important decision that we made after the pilot period was to switch IM software from Meebo to an open-source IM client, Spark, with an add-on called Fastpath. We encountered many limitations in the use of Meebo software, including the inability of more than one librarian to be logged on at the same time, the absence of a chat transcript archive; and software instability. Spark allows for many librarians to monitor reference simultaneously and has much more functionality than Meebo including: the ability to capture and email transcripts to users, user queues, the capability to transfer questions between librarians for referrals, and the availability of chat rooms for group consultation. Spark is much more robust than Meebo and better serves the needs of the librarians and library users.

With the high usage and overwhelmingly high overall satisfaction of IM reference services, the IM pilot project at CSUSM was very successful. Following the initial pilot period, other CSUSM library staff have begun using Spark, enabling reference librarians to transfer non-reference library questions to the appropriate service staff. IM has become a permanent access point for students to contact librarians, removing the physicality barrier, and better allowing students to obtain research help.

Conclusion

After a one-year pilot period of IM reference services, the CSUSM Library is offering IM chat reference as a permanent access point for research assistance by librarians. Students, faculty and staff heavily use our chat reference service, and the community users are overwhelmingly satisfied with the IM service. We surmise that the success of our local chat reference implementation may be due to CSUSM being a commuter campus with satellite campuses, which makes it difficult for distance learners to go to the physical library on the main campus for research assistance. We hypothesize that our results could be explained by a combination of the following: prominent placement of a chat box on the library home page, a user preference for IM as a contact method over in-person/phone/email, and a strong integration of information literacy into the curriculum. Lastly, the use of screencasting with IM significantly enhances reference interactions allowing for visual communication. However, further studies are needed to determine if library users really prefer to IM over traditional reference access points, or if we are reaching users that would not ordinarily seek research assistance if it were not for the ease, anonymity, and high quality of service of IM/chat reference. Additionally, future research on local chat reference implementation at residential campuses, as compared to commuter campuses and distance programs, could provide further evidence on information seeking behavior of library users and assist libraries in making decisions about their reference services.

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