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The Nuts, Bolts, and Teaching Opportunities of Real-Time Reference

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ABSTRACT. Since the implementation of its instant messaging reference service in the 2000-2001 academic year, the librarians at the University at Buffalo (UB) have succeeded in creating a vital presence for virtual reference. The Instant Librarian chat service, open 57 hours per week during the fall and spring semesters, supplements the traditional face-to-face and e-mail reference services available at UB. Real-time reference using AOL Instant Messenger addresses the expectations of a well-informed population of UB users comfortable with the conveniences enjoyed via the Internet, such as file sharing and instant messaging. Librarians at UB use Instant Librarian to their advantage by employing active learning techniques, while answering both simple and complex questions. A chat

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session is a unique way to reach a patron who normally would not come into the library for help. In the chatroom, the librarian creates a positive teaching environment, prompting repeat visits and even in-person follow-up research consultations. This paper describes the nuts and bolts of UB's chat reference service and illustrates ways UB librarians attempt to incorporate teaching strategies within the online environment. The first section discusses issues such as staff training, technology/software problems, marketing/publicity matters, and the methodology and purpose of a user survey. The second section addresses the instruction element of UB's Instant Librarian. Librarians take advantage of the online environment to promote self-directed learning. The paper also includes a literature review highlighting published articles, books, and surveys that examine the significant facets of a real-time reference service. doi:10.1300/J106v13n03_05 [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2006 by The Haworth Press, Inc. All rights reserved.]

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INTRODUCTION

The virtual reference service at the University Libraries of the University at Buffalo, The State University of New York (UB), currently referred to as Instant Librarian, offers real-time chat reference service for students, staff, and the general public. While most public and academic libraries provide some form of online reference, whether through electronic mail or Web forms, online chat reference software enables librarians and patrons to communicate in real-time and search together (Johnson 2004). Begun as a pilot project during the 2000-2001 academic year, Instant Librarian is an alternative to the traditional face-to-face reference interview or phone inquiry, and is an important tool in outreach and instruction for UB patrons (Foley 2002, 36-45). With approximately 27,000 undergraduate, graduate, and professional students as well as public users, the university faces tremendous technological and intellectual demands. Librarians must be familiar with the latest technology in order to meet the needs of such a diverse clientele.

Chat reference addresses the expectations of a well-informed population of UB users comfortable with the conveniences offered through

access to the Internet, such as Google and Instant Messaging. A chat session provides a unique way to reach a patron who normally would not come into the library for help. This reluctance often stems from a fear of asking for assistance, or a simple unwillingness to physically enter the library. In the chatroom, the librarian creates a positive teaching environment by promoting active learning techniques. Chat encounters prompt repeat visits and in-person follow-up research consultations. This paper describes the methodology employed in setting up a library chat reference service and discusses new ways to promote active learning in a virtual setting.

REVIEW OF THE LITERATURE

Before providing details about starting up an online reference service, a brief review of the literature and supporting materials available to professionals is necessary. For example, the chat reference manager should be familiar with its history and evolution from asynchronous e-mail to real-time live message format. An examination of the literature shows that online reference continues to make an important mark on academic, special, and public librarians' responsibilities as teachers and information professionals. The wealth of published articles, books, and surveys contains details on how to oversee an online reference service as well as the pros and cons of such a tool. More recent literature addresses teaching strategies librarians can use to connect with millennium generation students online. Virtual librarians answer ready reference questions, but they also have the opportunity to teach more customized online research skills and promote self-directed learning in a multimedia environment. A brief summary of published research about online reference is given below.

As of September 2004, Sloan of the University of Illinois at Urbana-Champaign has compiled an extensive bibliography related to the topic of online, virtual, and digital reference services in mostly public and academic libraries (Sloan 2004). While he does not divide the over 700 citations into subtopics, he covers a wide range of subjects such as administrative issues, public service guidelines, distance learning, resource sharing, starting and running a virtual reference service, service trends, technology demands, and assessment and evaluation methods. The bibliography serves as a thorough introduction to digital reference from 1994 to the present.

Significant studies and surveys address the current state of digital reference, how to set up a virtual chat service, and evaluate user profiles,

types of software, and actual chat questions. In *Chat reference service: An analysis of one semester's data*, Sears (2001) analyzes four months of chat reference questions received at a centralized reference services desk at Auburn University. The study determines whether the questions were localized to specific library resources/services and the extent to which patrons or librarians consulted resources during the course of the chat session (Sears 2001, 1).

Francoeur's *An analytical survey of chat reference services* (2001) presents findings based on an international survey of chat services. He discusses the types of libraries that use chat reference, including the software selected, the potential advantages of consortial agreements, user trends that have prompted digital reference, and ideal conditions needed for a successful service.

The Association of Research Libraries-Systems and Procedures Exchange Center survey program gathers information from ARL member institutions on current research library practices and policies (Ronan and Turner 2002). In 2002, a SPEC Survey on chat reference (defined as synchronous or real-time text-based messaging between computer users on the Internet) distributed to the 124 ARL member libraries resulted in sixty-six responses. The survey results provide an overview of staffing, organization and management, skills and training, typical service schedules, users and usage profiles, policies and procedures, publicity trends, assessment strategies, software technology, and collaborative chat reference services. The survey concludes that "a total of 67 ARL member libraries now offer some type of chat reference service. The number of services almost doubled in less than a year, spreading from 29% of the ARL membership in July 2002 to 54% in December 2002" (Ronan and Turner 2002, 13). This type of survey emphasizes the significance of online reference in today's libraries. As libraries rely more on online resources, such as databases and free Web-based tools, students expect 24/7 live turnaround to their queries. The book *The virtual reference experience: Integrating theory into practice* (Lankes et al. 2004) takes a more theoretical approach to the topic, examining not only the types of patrons who use digital reference and user perceptions, but also patron needs and expectations, the significance of proper training for real-time librarians, and guidelines and policies regarding privacy rights. A chapter entitled, "Not Just Q and A: An Inclusive Examination of Digital Reference Services" by Bankhead (2004) explores how digital reference provides an effective arena for more than just the traditional ready reference functions such as bibliographic instruction, readers' advisory services, and roaming reference.

TEACHING COMPONENT

Tenopir writes at length about digital reference. In a survey conducted by Tenopir and Ennis in 1991, several librarians predicted the end of library instruction (Tenopir 1999, 277). Conversely, as a result of further research, Tenopir concludes that the increase of resources available online and the expectations of online users have prompted the need for more instruction (1998, 84).

According to Johnston (2003), digital reference service offers a more convenient, individualized instructional approach. She discusses how the online reference service at New Brunswick College allows for less formal information literacy exchanges between a student and a librarian. Her study concluded that 60% of online queries contain some instructional element (31).

Hill and Stahr (2003) discuss the “teachable moment” in which the virtual librarian can interact in real-time and co-browse databases and other digital collections with the patron, teaching students how to find and evaluate the information, rather than just provide the answers (2). Virtual instruction initiatives at Southeastern Louisiana University include “virtual library meetings” serving as follow-up sessions to bibliographic instruction delivered to undergraduate nursing students. For example, small groups interact with two librarians to refine their search strategy, identify appropriate databases, and search for relevant journal articles (3).

Libraries are using chat software to not only deliver traditional reference assistance but also to run online library orientations and research instruction sessions for distance learning students. Jaworowski (2001) writes about these efforts as well as the challenges and advantages with chat instruction, mainly the inability to browse links simultaneously with users. Jaworowski stresses that conducting a research session in a chat environment often requires more than one librarian per session—one to actually conduct the teaching, one to answer any off-topic questions, and one to help lost students catch up during the session.

In her article, *Approaches to teaching through digital reference*, Ellis (2004) presents some challenges and benefits of teaching via digital reference. She advocates promoting “self-directed learning” and encourages pedagogical practices based on the Association of College and Research Libraries Information Literacy Competency Standards for Higher Education. Ellis’ article reports on Newman Library of Baruch College’s implementation of information competency through digital reference services beginning in March 2001. Ellis examines 138 chat transcripts from March 2001 to October 2001 to identify the methods by

which librarians incorporate the ACRL Standards in digital reference. See also Francoeur and Ellis' analysis of chat reference transcripts (2001) that was presented at the third annual Virtual Reference Desk Conference.

Woodard (2005) compares the teaching moments that occur at a traditional reference desk with online chat transactions. Reviewing the library literature that discusses the instruction element of reference, she argues that the same teaching principles of traditional reference may apply to online chat reference transactions. She also acknowledges that there are barriers to online reference, such as the lack of ability to use nonverbal communication, and she advises more in-depth studies to determine the long-term impact of chat reference on student thinking (208).

The research summarized above provides ample background information for professionals looking to implement a chat reference service and reflects the UB Libraries experience with chat reference. The following section outlines how the Instant Librarian service has evolved since its inception in 2001.

INSTANT LIBRARIAN NUTS AND BOLTS

Schedule and Staffing

Maintaining a successful chat reference service demands a regular schedule of predictable hours utilizing a reliable and knowledgeable staff. UB's Instant Librarian is open 57 hours per week during the fall and spring semesters. Normal hours of operation are Monday-Thursday-11 a.m.-10 p.m., Friday-11 a.m.-3 p.m., Saturday-closed, and Sunday-1 p.m.-10 p.m. During final exams, the service stays open longer in the evenings. These hours extend live reference services well beyond the physical reference desk hours.

Twenty-six UB Librarians and four library school graduate students work as "Instant Librarians" (hereafter called either "librarians" or "staffers"). All staffers are assigned IDs following the naming convention UBLibrarian# (i.e., UBLibrarian29). The weekly schedule is set in advance and applies to the entire semester. Librarians contribute one or two hours per week to the service. Graduate students work an average of eight hours per week.

The UB is divided into two campuses, with 2.5 miles separating them. Librarians work the chatroom from offices in any of the libraries on either campus, or at home, since access isn't limited by location. The librarian

participants are all volunteers. A listserv enables staffers to share information and problems and facilitates swapping hours due to scheduling conflicts. The Instant Librarian Coordinator hires and trains the graduate students, coordinates the schedules, troubleshoots software problems, creates promotional materials, and utilizes the Instant Librarian listserv to make policy announcements and answer questions.

One ongoing problem is staffing the chatroom when a librarian is ill or on vacation. The Coordinator maintains a list of “backup” librarians who will work only when regular staffers are absent. Many librarians forget to swap hours or notify the Coordinator when they plan to be absent. In cases of illness, when a librarian calls in sick, if the Coordinator isn’t told, no one is aware of the vacancy until the moment they are required to be on duty. Periodically, the Coordinator sends reminders to the listserv that staffers notify her when unable to work a shift. The Coordinator often monitors the chatroom throughout the day to assure adequate staffing. Though time-consuming, it remains a necessity to maintain a fluid and professional service.

Software

The UB Libraries selected AOL Instant Messenger (AIM) as the chatroom program. AIM is the most popular chat software used in America, is platform-independent, free, very easy to learn, and offers the AIM Express component, which is required when security procedures prevent files from being saved to a PC’s hard drive. Patrons chat anonymously when using Instant Librarian. The only information the librarian receives about patrons are AIM usernames and typed questions. The anonymity of the service perhaps attracts shy or less confident users but this hasn’t presented a barrier to effective service thus far. The only personal information that’s needed during a transaction might perhaps be an e-mail address if patron follow-up is required. Patrons readily provide their addresses when asked. Periodically, staff evaluate other software packages to determine if one of them will better meet our needs.

Technical Problems

Technical glitches occur at times, sometimes due to different platform and browser requirements and because there are two different access points into the chatroom (AIM and AIM Express). Patrons and librarians may be running two different versions of AIM software from

two different browsers, etc. UB librarians have office PCs that are configured in a uniform fashion, but they are not identical, and these differences in speed and connections can make problems hard to diagnose. A technical support specialist/lead programmer is part of the Instant Librarian team and is called upon to assist when technical glitches cannot be fixed by the Instant Librarian Coordinator. The libraries' technical support team has been called on occasion when a problem appears to be librarywide or otherwise troublesome to more than one staffer. All of these parties together ensure minimal amounts of down time.

Clientele and Queries

The majority of users (about 75%) are UB undergraduates, but some patrons are UB graduate students and faculty members. Since its inception in 2000, faculty use has gradually increased and currently represents about five percent of the user population. However, this group is not the target of word-of-mouth and traditional advertising campaigns. Greater faculty use is expected in the future as instant messaging becomes a more accepted communication medium for those over age 30. Not all of the users of Instant Librarian are university-affiliated. To date, visitors from Australia, New Zealand, Mexico, Great Britain, Spain, Finland, Germany, and, of course, Canada (located only a few miles from Buffalo, NY) use the service. All patrons are helped equally. The librarian knows patron location only when voluntarily given or when the librarian asks during the reference transaction to determine how best to answer the question. This also applies to high school students, who comprise about one percent of Instant Librarian patrons.

Basic and directional queries comprise the majority of questions posed through Instant Librarian, such as finding shelf locations, searching BISON (the UB libraries online catalog), navigating the Libraries' homepage, using the online reserve system, and queries about service hours and loan periods. The remaining questions are subject-specific, taking longer to answer.

Normally, one or two patrons per hour visit the chatroom. Most interactions are 10-15 minutes long, although at times sessions can stretch to 30-45 minutes, depending on the depth of the question. Many patrons choose to tell the librarian their e-mail addresses for follow-up, especially for complicated queries or ones that require additional one-on-one consultation.

In cases when there are two (or more) users in the chatroom at one time, the librarian helps each person in a separate, private window. The librarian can open a private window at any point during the transaction, and the messaging is viewable only by the librarian and a single patron. This minimizes confusion on the librarian's part and assures patron confidentiality.

None of the transactions are saved for evaluation. Usage of the service is estimated using a statistical sampling method each semester. Currently, Instant Librarian receives about 75 queries per week. Usage has consistently increased over the four years of availability. In addition, staffers note that questions now require more in-depth answers than those asked in past years.

Instant Librarian staffers do not normally use the library's print reference collections, as most librarians use online sources or refer patrons to other subject specialists. This trend has been consistent throughout the four years of service. Print resources obviously should not be ignored, but referenced when appropriate. Librarians frequently supply titles and call numbers for the user to follow up on. Using online sources "provides an opportunity to promote the library's possibly under-utilized online reference collection" (Porter 2003, 59), underscoring the opportunity in online reference to market expensive digital resources.

Complex or "information literacy" questions often spring from students' current class assignments. The same questions are often asked several times at the face-to-face and virtual reference desks, tipping the librarians off that there is an assignment due. Chat reference allows librarians to easily alert other staff members about current assignments and share thoughts about the best resources needed. This sharing not only saves time, but fosters collaboration and the exchange of sources and techniques among librarians, resulting in better reference service. Maintaining an e-mail discussion list where librarians can keep up-to-date with assignments or general housekeeping issues facilitates an efficient service.

Training

The Instant Librarian Coordinator trains all staffers to use AOL Instant Messenger (AIM) and AIM Express software, and troubleshoot problems with connections. AIM Express, the basic version of AIM, doesn't store data on the user's hard drive and provides an alternative for patrons who either don't already have AIM installed or are at a

secure public computer that prevents storing or saving data to a hard drive. Training sessions cover navigating the UB Libraries' Web site and increasing expertise in using the online catalog and answering subject-specific reference questions.

For a short time after the launch of Instant Librarian, staffers worked the chatroom while also working a reference desk. This practice was discontinued because of interruptions between the two service points. Librarians reported feeling frustrated and unable to sufficiently help patrons either in person or in the chatroom since it was distracting to be monitoring two areas simultaneously. When a librarian was assisting a user in the chatroom, a walk-up patron would have to wait until the transaction was finished to get aid (which could be 15 minutes or more). Now all chatroom staffers work in their own offices or in other locations, to limit outside distractions.

Barriers/Limitations

Real-time virtual reference exchanges face many limitations not present during a physical reference desk interview, including the absence of “nonverbal cues, such as body language and gestures, lack of voice intonation or accents, language more like spoken than written, and the importance of typing skills” (Ronan 2003, 43). The MOUSS (Management and Operation of User Services Section) Management of Reference committee (ALA) revised the Guidelines for behavioral performance of reference and information service professionals drafted by the Reference and User Services Association (RUSA) to include remote forms of reference (Reference and Adult Services Division Ad Hoc Committee 2004). The main areas—approachability, interest, listening, searching, and follow-up—remain, however, the essential factors for a successful exchange, whether in-person, or remote. Instant Librarians are trained to answer each question with these elements in mind. Users who enter the chatroom should be immediately greeted by the staffer and asked if help is needed. Often rephrasing the user's question or asking for clarification assists in the absence of body language or facial cues. Understanding chat slang and acronyms helps in interpreting a user's remarks, although few users employ either slang or acronyms. Training sessions for new Instant Librarians address each of these issues. Helpful staff Web pages explain abbreviations used in chat (<http://ublib.buffalo.edu/libraries/units/sel/aim/readyref.html#helpful>).

Publicity/Marketing

Like most services at libraries, Instant Librarian requires marketing and promotion to attract users. A link to the service is provided from the UB Libraries main homepage (<http://ublib.buffalo.edu/libraries/>) and various other Web pages throughout the library site. Advertisements are placed in the student newspaper each semester, and small colorful flyers are displayed at service points. Advertisements in the student newspaper, redesigned each year to generate interest, appear more frequently during the latter half of the semester.

In 2001-2002, organizers promoted Instant Librarian in a variety of ways, with news articles in the *Buffalo News* (city newspaper), *Buffalo Business First*, *Library Hotline*, and *Library Journal's WebConnect*. Also, the local NPR radio affiliate featured Instant Librarian during a broadcast. Instant Librarian is frequently mentioned in user instruction classes given by UB librarians and in other classes taught by UB professors or teaching assistants. During the initial implementation of the service in 2000-2001, announcements during library workshops were avoided, fearing it would prompt "a flood of course-specific questions" (Foley 2002, 40). However, it was later determined that students and teachers responded positively to in-class promotion, and that librarians are not overwhelmed with too many assignment-related questions in the chat room. Future plans for the service include creating a single identifiable icon and making it ubiquitous throughout the Libraries and University Web site.

TEACHING OPPORTUNITIES

Although chat technology offers students a way to receive quick and convenient reference help, as educators, librarians must ask themselves how this service affects a student's learning process and whether it provides a positive lasting impression.

Based on the user survey results, patrons at the UB Libraries remain relatively happy with the Instant Librarian service and many visitors are repeat users. The majority of the students at UB are technologically savvy, relying on their cell phones and e-mail to communicate with their peers and instructors. Face-to-face communication, such as in-class discussions, meetings during office hours, and reference desk interviews, while not obsolete, have certainly changed with the popularity of e-mail and online learning tools, such as Blackboard and WebCT course

management software. With this in mind, librarians and administrators at UB continue to look for new ways to reach out to the students.

Like many large universities, the UB Libraries are spread over a large physical area. The Libraries' online presence allows students to access journal articles, Web resources, and electronic books 24/7. Students can look up a book or check on their interlibrary loan requests at all times. Best of all, they can download full-text articles to their desktops whether in their dorm rooms or off campus. Chat reference service serves as another tool in the online arsenal of students who are unable or unwilling to come physically on campus to ask questions at a reference desk. This service is an example of the extent to which UB strives to meet the growing needs of generation-Y and non-traditional students.

Given that the current generation of college students often choose to communicate using instant messaging rather than pick up a phone or go see their friends in person, libraries that learn to use this medium will be positioned to meet more successfully the challenge of providing reference services in an increasing digital world. (Ruppel and Fagan 2002, 183)

Librarians strive to create lifelong learners, but accomplishing this in both the classroom and chatroom can be a significant challenge. Many students want to know exactly where to find a list of articles on a particular subject, or are simply not aware of the advantages to learning how to perform more complex search strings. Both a library workshop at UB (usually 50-100 minutes in length) and a chat session limit a librarian's ability to forge the connections that occur between professor and student over a semester. Librarians cannot teach students all of the strategies needed for in-depth research in such a limited amount of time, but they can present important concepts in ways that stimulate learning and retention.

Unlike in the classroom, where instruction is frequently aimed at large groups, virtual reference allows for a single point of contact with a librarian (Marvin 2003, 3). With an online encounter, the librarian concentrates on meeting the immediate needs of individual students. Providing the user with customized services like relevant links, instruction on accessing a subject-specific database, or limiting search results improves a student's impressions of the quality of service available.

The following chat sessions are slightly edited examples of Instant Librarian exchanges. Through these exchanges, the librarian initiates a form of bibliographic instruction and the user is introduced to basic but

useful searching techniques. As shown below, the teachable moment, while brief, ultimately can lead to further contact with a user or encourage self-directed learning.

Chat Session A

User: Hi, I am searching for a specific machine or device that is important to Egypt in the 20th century development.

UBLibrarian: OK, what have you done so far?

User: I have tried looking under many different things, history, infotrac, proquest.

UBLibrarian: Are you trying to identify something appropriate or do you have a device and can't find any info about it?

User: I am first searching for a device.

UBLibrarian: So you might start with books or encyclopedia articles about Egypt.

User: Where would I go for that?

UBLibrarian: UB Libraries Catalog for books. Let me send you the URL.

UBLibrarian: <URL>

UBLibrarian: Here is a book on the construction industry. What did you see when you clicked on the URL?

User: I see the book. How do you know which library it is in?

UBLibrarian: At the top. It is in the Architecture and Planning Library which is on the South Campus. We can look for others.

User: Ok.

UBLibrarian: You can do a keyword search on Egypt and Technology.

UBLibrarian: Go to the database Academic Universe and search on Egypt and "new developments" or "new technology."

UBLibrarian: Can you give me your e-mail address? Then if I find something later I can send it to you.

User: Ok.

Chat Session B

UBLibrarian: Hello, what is your question?

User: I am trying to find some journal articles, but the searches I've been using are too broad, when I try the specifics, they do not come up.

UBLibrarian: What topic?

User: I'm an RA for a grad student doing research on ADHD, specifically, predictors of future problems based on current symptoms and/or impairment.

UBLibrarian: What database did you try?

User: Infotrac onefile, psychINFO and psychcrawler.

UBLibrarian: Ok—let me take a look, I will be back to you in a minute.

User: I'm not looking for the whole article, but the reference . . . thank you.

UBLibrarian: In PsychINFO I did a search on ADHD as a subject heading and then did a search on “predictors” not as a subject heading. Then I crossed the two searches by clicking on the COMBINE icon. I got 14 articles. I'll try to send the page to you.

User: I didn't know about the combine option.

UBLibrarian: Here: < URL >, click on that and see what happens.

User: I have it.

UBLibrarian: If you find a really good article you can use *Web of Science* to do a citation search, i.e., find later articles that have cited the good articles you already know about.

User: Oh, I think I have heard of that. See, I was trying to type it all at once. Without combining it.

UBLibrarian: Also you can use different terminology in the COMBINE search. Good Luck.

User: Thank you very much. I was simply stuck at the same place.

These examples serve to highlight opportunities for information literacy instruction in online reference. The article by Foley discussing the implementation of the virtual reference service at UB determined that about 26% of questions received during IM reference fell into the infor-

mation literacy category. “Information literacy questions required the librarian to explain the difference between online catalog and electronic databases, to suggest a database, or to offer database search tips” (Foley 2002, 42).

As demonstrated above, the information literacy category of questions often creates room for a “teachable moment.” Questions that may seem to require a quick answer likely become a tutorial on formulating search strings, choosing appropriate key terms, and explaining how to access the full-text of the citations. While addressing a patron’s questions, the librarian should keep in mind the ACRL Information Literacy Competency Standards for Higher Education. Information literacy is a key component of, and contributor to, lifelong learning. The standards provide a framework for assessing the information literate individual (ACRL 2000) and establishing an effective teaching environment.

1. Determine the extent of information needed.
2. Access the needed information effectively and efficiently.
3. Evaluate information and its sources critically.
4. Incorporate selected information into one’s knowledge base.
5. Use information effectively to accomplish a specific purpose.
6. Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally.

Standards 1 and 2 are the standards that are most often addressed during a reference interview and a follow-up consultation. In a virtual environment, determining the information that the patron needs is more challenging, since one is confronted with obstacles discussed above. However, the exchange, while brief, can be adequate enough to lead the patron in the right direction. An Instant Librarian staffer must use the same skills used at the traditional reference desk to make quick needs assessments. Maybe the patron really needs to start with an encyclopedia entry before looking at more scholarly resources, as shown in Chat Session A. Or perhaps the topic is too vague or too narrow. Many times a student will be directed to an online database such as in the above example with PsychINFO in Chat Session B. In this example, the staffer recommends using *Web of Science* to do a citation search, which will help the patron find similar articles.

Standard 2 poses problems for the virtual patron when he/she needs print data. Sometimes articles may be accessible only by coming into the library and visiting the stacks. This occurs less with the recent movement to e-only subscriptions. However, certain resources require in-house use,

such as specialty or non-circulating collections. In such instances, Instant Librarian staffers provide the patron with the appropriate instructions on how to access the material.

Throughout an online exchange, staffers must keep in mind that the user should leave the chatroom with the knowledge that databases in general will have similar searching capabilities. The Help sections of databases are often overlooked, but should be recommended to users to view examples of how to search exact phrases or to find more than just precise matches to search a term, especially if the correct spelling of a word is unknown. A quick way to help students define a topic is to point out the use of subject headings and how to identify them. Without going into a long discussion about controlled vocabulary, the staffer should suggest alternative search terms or ways to identify other key words, such as looking at the subject heading indexes that may be available in a database or examining one article of interest and pulling key words from the abstract.

Standards 3 through 6 are more challenging to incorporate into an online encounter. A librarian may not be able to teach a student to evaluate information in a five-minute chat session, but could certainly point him to help indexes or Web sites that offer such assistance. UB's *Research Assistant* tutorial at <http://ublib.buffalo.edu/libraries/asl/tutorials/research.html> includes tips on how to evaluate books, periodicals, and Websites. Chat users are often referred to this tutorial for details about primary versus secondary sources, and popular versus scholarly journals. "Collaborative browsing" is a feature that allows the patron to observe the librarian's movements on the screen when locating resources on the WWW or searching a database (Porter 2003, 59) and limits the amount of additional typing/explanations needed by the librarian. Unfortunately, UB's Instant Librarian software (AIM) does not allow for co-browsing, so links to recommended URLs must be pasted into a chat session.

A student is more likely to "incorporate selected information into one's knowledge base" (standard 4) and "use information effectively to accomplish a specific purpose" (standard 5) through the "transferable knowledge" approach (Ellis 2004, 116). In other words, rather than cutting and pasting a few citations that can be quickly identified as relevant to the topic at hand, a librarian can suggest ways to formulate searches by pointing out the purpose of Boolean operators, subject headings, indexes, and help menus. In her article, *Approaches to teaching through digital reference*, Ellis discusses how this "transferable knowledge approach" increases self-directed learning and "transforms users from

being anxious, dependent, and disinterested in learning to being self-efficacious, autonomous, and proactive learners” (116).

Standard 6 is becoming more of a concern for educators since plagiarism is at an all-time high at colleges and universities. Questions about how to cite Web sites and online journals are very common. Instant Librarian staffers refer students to the *Research Assistant* and other sites for instructions about citation styles and avoiding plagiarism.

The above techniques are traditional yet efficient ways to address a student's information needs. Producing information literate students in a digital age involves not only following certain standards and guidelines, but also looking for technically innovative ways to engage students. Currently, a group of librarians at UB is exploring alternative ways to enhance the teaching capabilities of their chat service. One such project entails the use of streaming video and online tutorials. Using Camtasia, a screen capture program, the librarians aim to create brief (5-10 minute) online tutorials that can be viewed through a web browser. Screen shots accompanied by a voice-over direct students on how to use library resources (i.e., the library catalog, InfoTrac Onefile). The goal is to provide the patron with access to both a live librarian and streaming video during a chat session, thus bridging the gap that often occurs when the librarian and patron are not face-to-face. The tutorials would provide another instructional opportunity especially during hours when the chat service is closed. This new teaching component combined with mediated online reference will help foster an inviting and user-friendly learning environment that directly correlates to new and non-traditional student needs and preferences.

USER SURVEYS

Instant Librarian proves to be a positive addition to the UB libraries' reference services. Each semester, a brief user survey (see Appendix) is given to record statistical information and opinions about the service. During a 2-3-week period in mid-semester, a JavaScript pop-up window appears when a user clicks on the button to enter the chatroom. The results are written to a file, sorted, and examined. The survey was designed to provide a snapshot of Instant Librarian's users. The brief and succinct questions (only 4 questions are asked) encourage participation from the typical busy university student. The results from surveys conducted in 2002-2005 show that the majority of users are affiliated with the University at Buffalo (87%) and are between the ages of 18-22

(55%). Our users' majors are (in descending order of frequency) social sciences (33%), other (26%), sciences (17%), humanities (10%), and undecided (5%) (Figures 1 and 2).

One question presented four methods to approach librarians for help. Users ranked these according to preference (listed in descending order):

1. Ask a librarian in person.
2. Use Instant Librarian chat.
3. E-mail the librarian.
4. Call the librarian.

To gain greater insight into the reasons users choose Instant Librarian over other help options, seven possible reasons were presented. The top three selected rationales are:

1. I get quicker help this way.
2. I live far away from campus.
3. I don't have to walk to the library.

FIGURE 1. User's Affiliation

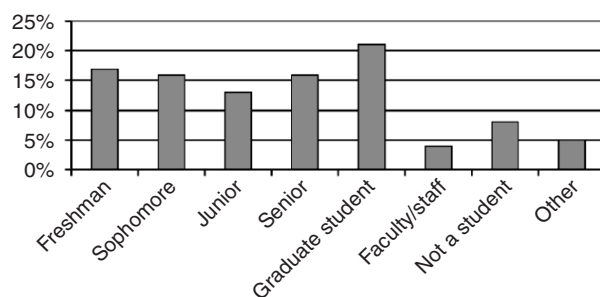
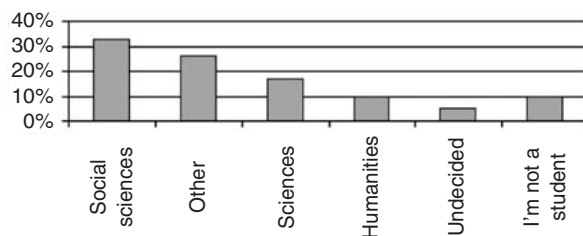


FIGURE 2. User's Majors



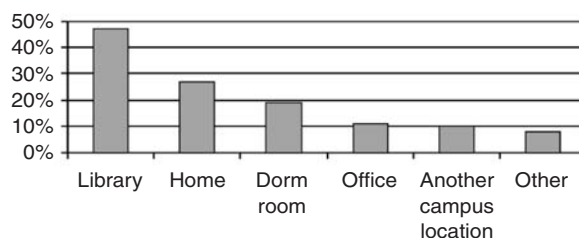
Over half of the users indicated that they learned about the availability of Instant Librarian from the UB Libraries Web site, while 22% stated they were repeat users of the service. The greatest number of respondents prefer to consult Instant Librarian when working within the library, while connecting from home/dorm room and from office were the next most frequently chosen locales (Figure 3).

Considering these results, patrons opt for convenience and speed whenever possible. Even while working within the library, users have no qualms about using chat rather than getting up from their seats and visiting the reference desk to obtain assistance. This may be due to fear of losing a space at a computer. UB librarians have discovered that many students are reluctant to walk away from their in-library workstations and in the process lose them due to high student demand. These students turn to Instant Librarian instead for help.

At the UB Libraries, the chatroom remains open after the reference desks close Sunday-Thursday nights. During finals, the chatroom stays open until 11 p.m. with brisk usage during these late hours. Librarians have reported three or four users in the chatroom at any one time during the evenings of final exams week. Students are predominantly patient and understanding when a librarian “puts them on hold,” while completing another transaction. Since demand during these times is manageable for one person, staffing the chatroom with one librarian has been sufficient.

A final question on the user survey allowed respondents to type a reply in their own words. The question “The best thing about Instant Librarian is _____” prompted a variety of answers, clustered into five distinct categories: (1) helpful advice is given, (2) it’s fast, (3) it’s not

FIGURE 3. User’s Location When They Enter the Chatroom



location-dependent, and (4) it's convenient/easy. Users seem to value quick, helpful answers and the ability to obtain help from any location. Chat reference clearly fulfills this need and its usage is expected to increase in the coming years.

CONCLUSION

The Instant Librarian virtual reference service at UB was created to assist users who feel more comfortable using the computer rather than calling or e-mailing the librarian to solicit help. The service does not replace traditional reference, but complements the more well-established methods of attaining help (in-person, telephone, and e-mail reference). Patrons appreciate this additional service point, and the Libraries promote the service as a unique tool to aid in library research.

Renaming the service Instant Librarian rather than Instant Message has perhaps helped to promote its availability. Users quickly make the connection that this is not just a chatroom, but a place where they can be assisted by professionals in real-time. Once in the chatroom, it's up to the librarian to take on the role as teacher. This may not always be convenient or realistic based on reasons stated above, but it is imperative that all questions be approached with the same goal in mind—to help users obtain information, and learn the strategies needed to obtain material thereafter. Librarians also must take into account the barriers of online reference, such as the absence of facial expressions or body language. Such limitations frustrate both the user and librarian, but should not interfere in the teaching process. Follow-up research consultations, phone calls, or e-mails accompany many online reference questions and help eliminate any confusion or barriers. Indeed, librarians should treat these interactions as ideal moments to educate their patrons about the many benefits of the library and its resources.

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APPENDIX

INSTANT LIBRARIAN USER SURVEY 2002-2003

1. How did you first hear about Instant Librarian?

UB Libraries Web site	The Spectrum newspaper
I have used it before	Professor/TA
Friends	Other

2. How are you affiliated with the University at Buffalo?

UB student	UB faculty
UB staff	Librarian/teacher
High school student	Other
Student at another university	

3. Please select your age range from below

Under 18	31-40
18-22	41-50
23-25	51-60
26-30	60 +

4. You use Instant Librarian because (choose all that apply)

I get quicker help this way
 I live far away from campus
 I don't have to walk to the library
 I don't want to lose my public computer

I only have one phone line
I don't have to speak with a real person
Other

5. Please rank the following options for getting help: (1 = Least preferred 5 = Most preferred)

Ask a librarian in person	1 2 3 4 5
Use Instant Librarian chat	1 2 3 4 5
E-mail the librarian	1 2 3 4 5
Call the librarian	1 2 3 4 5

INSTANT LIBRARIAN USER SURVEY 2004-2005

1. How are you affiliated with the University at Buffalo?

Freshman	Graduate student
Sophomore	Faculty/staff
Junior	Not a student
Senior	Other

2. Where do you use Instant Librarian: (choose all that apply)

Library	Office
Home	Another campus location
Dorm room	Other

3. Your major is in the:

Social sciences	Undecided
Sciences	I'm not a student
Humanities	Other

4. The best thing about Instant Librarian is _____