



Article

Out of the Question!... How We Are Using Our Students' Virtual Reference Questions to Add a Personal Touch to a Virtual World

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Abstract

Objective - To investigate the types of questions students ask and the language they use in virtual reference. It is hoped that this examination will provide understanding of students' needs and thus improve/enhance library services.

Methods - Over 600 virtual reference transcripts were reviewed, analysed and categorised. This work was focused on three levels of analysis: broad categories based on the general type of question being asked, subcategories based on the specific question and the language that students used to ask their questions.

Results - Students are primarily using the library's virtual reference service for higher-level research assistance rather than using the tool to obtain quick answers to simple questions. The two most common types of questions involved staff providing detailed information or instruction on a topic. More specifically, the most frequently occurring type of question was related to finding journal articles on a given topic. Our analysis of the words students use to

ask their questions confirmed that students and librarians often do not speak the same language.

Conclusion - The results of our analysis of students' needs and language can help us understand our users. This study demonstrated that our library can enhance services in five areas: online services, collections, relationships, staff skills, and the library as place.

Introduction

The University of Guelph, located in southern Ontario, Canada, is a research-intensive and learner-centred institution with 17,000 full-time students and 16,000 distance education course enrollments. The library has offered a virtual reference (VR) service since 2001; Docutek VR software is used and, since 2006, Windows Live Messenger (MSN) service has also been implemented. Ten staff participate in this service, which is available during daytime hours Monday to Friday. This paper describes the University of Guelph's virtual reference (VR) transcript analysis project and discusses how the evidence from the analysis can be used to enhance and implement changes to library services. The study involved a two-year examination of 600 Docutek VR transcripts, with a focus on the questions being asked by users. The analysis looked at the words being used by students in their questions, as well as the information and library-related needs demonstrated by these questions. The findings from the VR transcript analysis (the only written record of reference interactions with users) have been complemented by other information, including anecdotal evidence gleaned from reference desk interactions. In the past, decisions about library services were often made based on what librarians thought was happening in reference transactions, but examining the transcripts has provided concrete evidence. In some cases, the analysis confirmed what was already known, and in some cases the results were surprising!

Review of the Literature

As VR has become increasingly common, there has been an explosion of research and case studies in the library and information science literature. A number of studies have focused on analysing the transcripts of VR sessions. These have looked at various issues such as the types of questions asked, the types of users and resources used to answer questions, and the quality of responses based on standards such as ACRL. A number of studies have attempted to understand what users are asking by classifying VR questions into categories.

Diamond and Pease reviewed e-mail reference questions over a period of two years and found that similar questions were asked in the virtual format compared to the traditional reference desk. Questions were grouped under 11 categories including database mechanics, catalogue questions, information literacy and non-library questions (Diamond and Pease 210-219).

Sears analysed four months of transcripts to identify the types of users, types of questions, the resources used by staff to answer the questions and the extent to which library resources were used (Sears).

Broughton analysed usage data and user surveys for one academic year at Bowling Green State University (BGSU). Included in this study was an analysis of question type according categories such as finding articles on various topics, patron records, university information, off-campus access and referrals.

These categories were created by the librarians who provide virtual reference (Broughton 190-192).

Another review of virtual reference transcripts was undertaken by Curtis and Greene, who analysed the University of Nevada's university-wide chat service run by librarians. This chat service provides an opportunity for prospective students and registered students to ask questions about the university in general or library-related questions. This study identified that 25% of the questions were library-related and categorized as reference, authentication, reserves and interlibrary loan (Curtis and Greene 220-233).

Others have conducted similar studies for instant messenger (IM) transcripts. Foley describes a University of Buffalo pilot project to determine the viability of providing a chat reference service. The project utilized America Online's Instant Messenger software, and data was collected for a period of one academic year. In order to protect privacy, transcripts were not kept; however, after each session staff were responsible for paraphrasing the question and entering it into a database. The questions were reviewed and they were categorized as information literacy, catalogue, navigation of library Web site, general library information, technical issues, general Web navigation, reserves, university information, research, ready reference and questions about virtual reference (Foley 41-43).

Desai describes the use of IM at Southern Illinois University by identifying the usage, the types of questions asked and the impact of the technology on the reference interaction. Similar to other studies, questions were categorized based on Katz's categorization of reference questions with the addition of an 'other' category (Desai 23-25).

Some studies have compared the use of the different mediums for delivering online reference services. Lee conducted a comparison of chat and email reference questions, including an analysis of the types of questions asked, the number of words required to answer the questions, the number of calls and their duration, as well as the metrics of the chat transcripts. Questions were categorized as administrative or reference (Lee 98-108).

A number of studies have analysed transcripts to evaluate the responses provided by reference staff. A team at Central Missouri State University used the Reference and User Services Association (RUSA) guidelines as an evaluation tool (Zhuo, Love and Norwood 75-88). Another team applied the RUSA guidelines to an analysis of transcripts generated by a Tutor.com homework help service and found that the transactions were severely lacking in the qualities required for effective reference service (Walter and Mediavilla 214-221). Smyth, in addition to analysing the transcripts for question type using Sears' classification, also looked at the quality of the response based on ACRL Information Literacy Competency Standards (Smyth 28-29).

A few studies have examined problems with the use of "library terminology" and differences in online communication styles between librarians and young people. Kupersmith used Web usability testing and focus group methodology to study library Web site terminology. He asserted that the average user success rate for finding journal articles or article databases from a library website is 53% due to the use of library terminology. He lists commonly used library terms not understood by users, such as database, index and periodical. Kupersmith's Web site also provides links to a number of studies that look at issues such

as terminology used on library Web sites (Kupersmith).

Fagan and Desai discuss common communication problems in the online environment and examine how effective communication strategies can be adapted and applied to this medium. Using transcripts to provide examples of good communication strategies, they argue that the skills needed to communicate effectively with patrons are different in the online environment. They suggest that librarians must avoid using library jargon and "robot-like instructions" by "speaking the patron's language." They provide tips on adding a human touch to IM reference transactions, including the use of more natural language and emoticons. Part of their article focuses specifically on language and grammar, and the authors warn that spelling and grammar-conscious librarians may have to lower their standards when chatting with patrons in an IM environment. They argue that using common IM language, which may include abbreviations, shortcuts and misspellings, can make the librarian seem "more approachable and less robotic" (Fagan and Desai 125-143).

Similarly, Janes suggests that *librarians* must understand instant messaging lingo and culture to communicate effectively with young people (Janes 451). While many studies have focused on analysing the transcripts of VR and IM sessions, few articles have gone to the next level by examining the language students use to communicate with the library. Furthermore, while much of the research is useful in that it tells us how students are using online reference services, there has been little discussion in the literature about how this information can be used to make libraries more user-friendly. The current study will attempt to address these issues.

Methodology and Focus

Approximately 600 virtual reference transcripts were reviewed from transactions that took place over a five-month period from September 2005 to February 2006. Although using two people to categorise the questions would have increased the reliability of the results, in an attempt to maintain as much consistency as possible, one person was responsible for the question categorisation. While the focus was on the questions rather than on the answers, it was often necessary to examine the entire transcript to determine what the student was asking. Classification of reference questions is a difficult task, as the question asked is not necessarily the question that needs to be answered. Furthermore, many sessions involved more than one question. In this case, the session was categorized according to the original question and each session was counted in only one category.

Analysis of the transcripts was based of three levels of analysis. Questions were first classified into broad categories based on the type of question. They were then separated into subcategories based on what the student was asking. Finally, the language that students used to ask their questions was analysed. In other words, the researchers wanted to know what students were asking and how they were asking it. The researchers used Excel spreadsheets to keep track of the questions and categories.

Categorization of questions

The broad categories were based loosely on Sears' adaptation of Katz's categories of reference questions, namely directional, ready reference, specific-search, research and policy and procedure (Sears; Katz 14-18). Directional questions involve directing the user to a geographical location or to a place

on the library Web site, policy and procedure questions involve inquiries about such topics as borrowing periods and fines, and ready reference questions are related to factual information and can be answered using reference materials. Specific search questions require detailed information or instruction on a topic and users are often referred to various sources. An example of this would be questions regarding finding journal articles on a given topic. The research category involves higher-level research, generally of the type that would be conducted by faculty or graduate students.

The categories were broken down into subcategories based on the topics of the individual sessions. A total of 39 subcategories were created across three of the broader categories (Directional, Policy and Procedural and Specific Search). Subcategories were created by the authors based on the content of recurring questions. If there were a sufficient number of questions on a particular topic, a subcategory was created to classify similar questions. The intention was to break each topic down as much as possible to see what kinds of things students were asking. This helped to determine, among other things, the most commonly asked questions.

Following the classification of questions into broad categories and topic-based subcategories, the researchers re-examined the language used by students in each question to identify common terms or "lingo." Transcripts were scanned for examples of library lingo and for recurring terms in students' questions, and these were highlighted. The researchers also used the search capabilities in Excel to determine the number of times a particular term was used. For example, with respect to questions about finding journal articles, the various terms students used to ask for journal articles were closely examined and a list of all the words they used to ask for help finding articles was developed.

Results

Types of Questions

The highest percentage of questions (41%) can be classified as specific search. Policy and procedure questions accounted for 39.4% of the transactions, directional questions accounted for 14.87% and ready reference for only 4.59%. Higher-level questions that could be classified as "research" were not asked on VR.

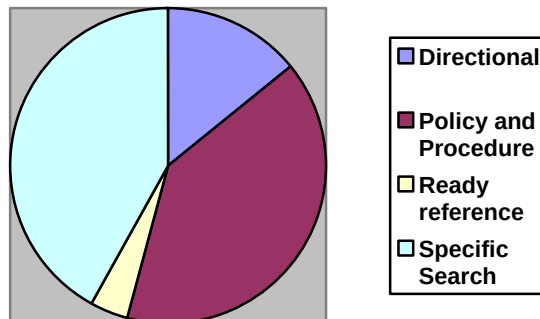


Table 1. Types of questions asked

Question type	Frequency (number of times asked / 600 questions)
How to find journal articles	106
General research strategies	71
Off-campus access	60
Locating library Web resources	36
Library accounts	32

Table 2. The 5 most frequently occurring questions and how often they were asked

Specific search questions were broken down into the following subcategories: archives/special collections, data, Geographic Information Systems (GIS), e-books, finding books, finding articles/journal searching, getting started with research, government documents and statistics, index-specific questions, using newspaper sources, referencing, finding theses and finding videos. Policy and procedures questions were broken down into alumni/community borrowers access, audio-visual material, document delivery procedures, collections policy, holds/recalls procedures, user accounts, general library services, non-student access, off-campus access, open learning/distance education, ILL procedures, reciprocal borrowing, renewals, reserve procedure, special collections, technology issues and general university questions. Finally, the directional category was broken down into questions about the physical library, Web resources and inquiries about the university campus or Web site.

These subcategories were used to determine the most commonly occurring questions. The two most common types of questions were search-specific. Of these, the most frequently occurring question was related to finding journal articles. Questions were classified in this subcategory when a student specifically mentioned that journal articles must be used as a source of information. A straightforward example of this type of question is, "I am looking for journal articles

on women's rights in Nigeria. Can you help?" Of course, students expressed this need for information in many different ways, and often did not understand what they were being asked to look for. In these cases, a more complex online reference interview was often required to determine what the student was being asked to do. Table 2 provides an illustration of the five most frequently occurring questions and how often they were asked.

The next most frequently occurring questions revolved around general search strategies (n=71). Questions were classified here when the focus was on finding any information on a topic, not necessarily specific to journal articles. An example of this type of question would be, "I would like some information on something referred to as sickle cell disease." General search questions that required instruction but were not linked to a specific type of source were also classified here.

The third most frequently occurring questions were related to off-campus access (n=60). These involved, for example, questions about how to access databases and e-journals from home. The fourth most frequently asked questions were directional questions about locating resources on the library Web site (n=36). The frequency of this question can perhaps be attributed to a change in the library Web page at the beginning of the semester during which the transcripts were analysed. The fifth most

Term used	Occurrence	Term used	Occurrence
Articles	27	Full text journals	2
Journals (often used when they really mean “articles”)	22	Magazines	2
Journal article –	17	Refereed journals	2
E-journals (ejournals, etc.)	8	Empirical research articles	1
Online journals	7	Journal entry	1
Peer reviewed articles	6	Periodicals	1
Research articles	6	Popular articles	1
Academic journals	5	Scientific articles	1
Scholarly journals	4	Scientific journals	1
Scholarly articles	3	Academic journal articles	2
Empirical articles	2		

Table3. Terms students used when asking for journal articles

frequently asked questions were policy and procedure questions related to library accounts (n=32). An example of a typical question is “I’m not being allowed to charge out books. The library says I have an overdue recalled book, but the only recalled books I have aren’t due yet. Do you know why this is happening?”

Status and location of users

Information regarding the status of users was also collected, as users are asked to provide this when they log into the service. The following results include repeat users, as there was no way of separating out the results for unique users. As this field was not required, 14% of respondents (n=86) provided no information. Of VR users who did respond, undergraduate students made up the largest percentage (47%, n=268), followed by graduate students at 17% (n=97). About 13% (n=74) of respondents identified themselves as not affiliated with the university, while only 5% (n=29) were faculty. Only one respondent self-identified as a distance education student.

In terms of physical location, approximately 57% (n=336) of VR users were physically present in the library, while another 15% (n=89) were located somewhere else on campus and, 27% (n=159) were located off-campus.

Language Used

Following classification of the questions, the language or words within each question was then examined. The most frequently asked question on finding journal articles was asked over 100 times using 19 different variations of words! Table 3 illustrates this by showing the number of different ways (and their occurrences) that students asked for journal articles.

The majority of students asked for “articles” or “journals.” Sometimes they used the words “e-journals” and “online journals,” or added the phrase “peer-reviewed” or “research” to their requests. Out of all of the questions about “journal articles”, only one person used the word “periodical.” None of the students used either of the words

Librarian language	Student language
Periodical	Journal
Databases, indexes	Get an article!
Faculty, faculty member	Prof, professor, teacher
Catalogue	TRELLIS (name of library catalogue)
Resources	Articles, books, Web sites
Reference collection	Background information
Citing (for a bibliography)	Referencing
Interlibrary loan	Borrow from another library
Stacks	Shelves

Table 4. Variations in librarian and student language

“index” or “database,” two words frequently used by librarians!

Another example of student language was discovered in the words they use to define journal articles that are appropriate for a university paper. Half of the students who asked specifically about academic articles used the word “academic,” and half of them used the term “scholarly.” Similarly, librarians tend to use the word “faculty” when referring to the students’ instructors; students use the words “prof,” “professor” and “teacher,” but did not ever use the word “faculty.”

The library catalogue provided another example. The library catalogue at the University of Guelph is called TRELLIS. Students asked for ‘the catalogue’ twice, but they asked for “TRELLIS” 30 times. However, there were many more questions about finding books, DVDs, archival materials, etc. in which students did not know where to start. For them, neither the term “TRELLIS” nor “catalogue” may be meaningful.

Librarians often speak of “resources,” but students only used that word 11 times. They consistently asked for the product they were looking for – books, articles, or websites. The phrase “interlibrary loan” was used only

twice, but there were over 30 questions about the interlibrary loan service. Students tend to say “borrow from another library” or some variation of that, and may not easily understand the phrase “interlibrary loan.” Table 4 highlights the language used by librarians and the terms used by students to mean the same.

Discussion

Categorizing the questions confirmed anecdotal evidence of what librarians already know, or think they know, about the types of reference questions being asked. Staff members who work on virtual reference also help students at the traditional reference desk, and most were not particularly surprised by the results. Questions requiring students to find journal articles on a given topic are extremely common at the reference desk. Tracking the reference questions at the physical desk is difficult, however, as staff members do not have the time to write every question down and need to consider privacy issues. The VR transcripts therefore provide a written record of at least a part of the library’s reference services. This helps to confirm and better understand what our users are asking.

The results of the transcript analysis should help librarians to better understand their

students and to develop a sense of needs that are not being met. Analysis of the transcripts demonstrates that students are primarily using the library's virtual reference service for research assistance with tasks such as finding various sources of information on a topic and finding journal articles for course assignments. They are also asking for help with technical issues and with navigating the library Web site.

The relatively small number of ready reference questions is not surprising in an academic environment, as the library's mandate is to teach students how to understand and find information rather than to simply direct them to answers. Still, it is interesting to note that contrary to what many librarians originally expected of virtual reference, it appears that students are asking research questions in the online environment as opposed to simply using the tool to get quick answers to simple questions. The literature suggests that these results seem to be representative of the types of questions being asked at other libraries (Broughton 190-192; Smyth 27-28; Sears).

The fact that only one user self-identified as a distance education student is perhaps surprising, considering the large numbers of course enrollments in distance education courses, indicating a possible need for marketing and promotion to off-campus students. Faculty (5% of users) may also benefit from marketing. Another related and unexpected result of this analysis revealed that close to 60% of VR users were physically present in the library and fewer than 30% were located off-campus.

This raises questions about why students were using VR when located in close proximity to a reference desk. Perhaps it is simply a preference for the online environment on the part of these individuals, yet there are a number of other possibilities

to consider. Is there a problem with the physical layout of the reference area, making the desk difficult to identify? Are some students intimidated about asking a reference question and the desk? Are these issues related to signage? It should be noted that at the University of Guelph Library, the reference desk was named "research help desk."

The transcript analysis also confirmed that librarians and students sometimes have different goals and that they do not always speak the same language. Librarians focus on databases and indexes, and students focus on articles: one extrapolation from this finding is that students want, and ask for, a product — they want an article — rather than a tool or method, like a database or an index. Librarians tend to focus on the process and on teaching the students everything we think they should know about databases and indexes. Students' focus is on getting the articles and the information they need to write a paper. In addition to this realization about what students really want, when student words and traditional librarian language were examined, it appeared that "librarian language" is often very different from "student language." When designing Web sites, knowledge bases and other online tools and when teaching classes, librarians need to be aware that students may use different phrases for the same thing, and they may not understand an alternative phrase. Libraries may wish to examine how to move away from "librarian language," or at least add in "student language," in tools such as library Web sites. Student terminology could also be used when creating metadata for our knowledge base.

The information gleaned from this type of study can be used to improve library services and access. By assessing the types of questions students are asking and examining the language they understand

and use, librarians can think about how this information can help libraries become more user-friendly. With this in mind, the authors have identified five areas in which libraries can use this evidence to improve their services. In some cases, improvements have already been made, and in some cases, potential changes are suggested.

1. Enhancing online services

Library services are increasingly moving to a virtual environment and the Web site and online services are an essential means of communicating with users. It is therefore essential that these tools reflect and use language that users understand.

The information gleaned from the transcripts has been used to improve the library Web site. As mentioned earlier, one of the most commonly recurring questions at the University of Guelph involved accessing electronic resources from off campus. Staff realized that the link to off-campus access login information was not prominently displayed on the library homepage, and a more noticeable link was added. Library Web sites are perhaps the most glaring example of poor communication between librarians and users. While many library homepages still use terms such as “journal indexes” or “databases” to direct users to these tools, our research indicated that few students use these terms, and few are likely to understand what they mean. To ensure that users make the connection between what they are looking for (journal articles) and the tools they must use to find them, library Web sites can use simple user-friendly language such as “find journal articles.” The University of Guelph changed the wording of the “journal indexes” link to a prominent “journal articles” link, based on the knowledge that this is the term students use most frequently when they ask about finding articles.

Changes to language and terminology could also be used to improve access to other online tools on the library Web site, such as tutorials, subject guides and also to develop a knowledge base that students can use to find answers to common questions. A knowledge base is a searchable database of frequently asked questions that users can use to get quick answers to their queries. Information about how students communicate with the library can be used to create a user-friendly tool that users can interact with in their own language and that will respond to users in their own language. Many FAQ pages require students to know which words the library uses to find the response. For example, a student would have to know that a journal index must be used to find scholarly articles to find the relevant question on the FAQ page. Some knowledge bases created from VR transcripts simply take questions directly from transcripts and dump them into a database, which presents the same problem. Virtual reference transcripts allow librarians to create more student-friendly knowledge bases and FAQ bases by presenting questions and answers that are easier to understand and by developing metadata based on the words students use in the transcripts. Rather than simply dumping questions from a VR software package into a knowledge base, it is possible to take a number of similar questions, edit them to make one question and response, and then attach metadata so that students can ask questions in their language and get a response. There are commercial tools on the market, developed for customer service purposes, which offer a great deal of customization, including editing questions and adding metadata to ensure that users can retrieve an answer using a variety of search words.

2. Enhancing our relationships

Student questions on the VR prompted the creation of new tutorials in information literacy as students were perceived to be having difficulties. For example, the University of Guelph offers Geography 1220, a first-year course on the impact of humans on the environment. The assignment for this course is complex and it was apparent from the VR questions that many students were not able to complete it without assistance. The Geography librarian created an online tutorial specifically for these students and this assignment, and alerted the faculty and Research Help Desk staff to this tutorial. A further example occurred when Sociology 1100 students began using VR in large numbers. Their librarian intervened by offering drop-in research clinics for these students. Once again, a need was identified from the VR transcripts and students took advantage of the service that was offered. Because of the number of general questions from undergraduate users (who comprise vast majority of Guelph's VR users) initiatives were established to help them navigate the library. For example, students frequently came into the library and into VR to ask for help in differentiating between our main library building (McLaughlin), the Agricultural Economics building (MacLachlan), the Physics building (McNaughton), and the Arts building (MacKinnon). With so many similar Scottish building names, they were understandably confused! To address such problems, one initiative involved locating a "welcome" table in the library foyer, staffed by friendly library staff, where pens and candy were handed out and students were helped with finding their way around the library and the campus.

As Guelph's VR numbers continue to rise and in-person reference desk transactions decrease, the need to reach out to the students has become even more apparent. In addition to offering VR and expanding it to include the student-friendly

MSN chat, a roving reference service has been implemented, in which staff are encouraged to get up from the desks and approach students with an offer of help. This service is being very slowly introduced at Guelph, but the need for it seems clear given the apparent reticence of so many students to approach a staff member at a desk. In conjunction with the introduction of a roving reference program, workshops on customer service have been held for all reference staff to ensure the best possible service is offered—whether in VR, roving, email, or traditional reference service.

3. Enhancing our skills

Another result of examining the student questions was the realization that some of them are very difficult for staff to answer! For example, questions related to GIS and government publications are often challenging for reference staff, and the VR transcripts proved that this is the case at Guelph. An awareness of staff difficulties can indicate a need for staff training. It may also indicate that some questions are too complex to answer in the confines of a VR session and that referrals to staff outside of VR should take place.

4. Enhancing our collections

VR transcripts have been used to help identify gaps in library collections and support acquisitions requests and decisions. For example, many of the questions related to difficulty in finding business journals and other resources, particularly those related to leadership. Enrollment in business-related courses at Guelph has increased by 88% in recent years (University of Guelph College of Management & Economics, 2007). The questions indicated that Guelph's library holdings had not kept up with the interest in business and commerce. The business librarians strongly recommended the purchase of many new resources related to

their subject area, supported by tangible evidence such as statistics from the VR questions in this subject area. With many different subject areas competing for limited acquisitions funding, it is useful to have tangible evidence to back up requests for new resources; VR questions and statistics can provide some of this evidence.

VR questions can also illustrate which courses and assignments are creating problems for students. When many students in a particular course are asking questions in VR, it becomes apparent that there are library-related problems or issues that need to be addressed. In some cases, students may benefit from a library instruction session to help them with their assignments. In others, assignments may contain inaccurate information about the library; for example, incorrect citations are sometimes supplied or references made in course outlines to materials not held by the library. If students are having difficulties creating bibliographies, liaison librarians can help by contacting faculty and offering some library instruction, by ordering materials listed on course outlines that are not in the library collection, by letting faculty know about incorrect citations listed on assignments, or by altering reference staff to problems with assignments and course outlines. If it becomes apparent that students could benefit from a library service or tool, such as writing clinics, online tutorials, or RefWorks (bibliographic software) classes, faculty can be asked to let their students know about these offerings.

5. Enhancing the library as place

Library signs are important. As Jeannette Woodward notes, "Signs are an absolutely essential ingredient in your library's success formula." (118). Unfortunately, especially considering that libraries are in the business of information, signs are often inadequate: they may be unprofessional looking;

sometimes there are too many; sometimes there are too few; sometimes they are confusing. Sometimes all of those descriptions apply. On Flickr, the photo-sharing website, there are groups devoted solely to library signs, many of them posted as an example of what not to do. (For example, see <http://www.flickr.com/groups/librarysignage/>). The VR transcript examination pointed out some of the gaps in Guelph's library signage. For example, even though students were sitting at library computers a few feet away from the centralized printers, they could not figure out where they could print. When one actually looked around the library, existing signs were observed to be small and obscured, and some of printers had no signs at all! Other directional questions being asked in VR point out other signage needs as well—to more effectively direct people to pencil sharpeners, photocopiers, and classrooms.

One of the most important things learned from the VR project relates back to the discussion of language. Like many libraries, Guelph has always displayed signs reading "Periodicals" and "Indexes." As discovered through the students' questions, they don't use those words; in fact, they may not understand what those words mean. It is time to change library signs, so that they reflect what users say and understand. Signs for "Periodicals" need to say "Journals!"

Conclusion

VR transcript analysis, particularly the examination of the questions and the words students use to ask them, has provided a tremendous amount of information and has led to a change in some aspects of library services at the University of Guelph. Future work could develop the analysis further to include an analysis and comparison of the more recently offered instant messaging (MSN) reference service. A comparison of

the ways in which students use the two services, the language they use in each, and the effectiveness of each type of service may also provide information about how we can better meet the needs of our users. By reading students' words, librarians are really trying to listen to what they are saying.

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