This content analysis of virtual reference transcripts taken from NCknows, North Carolina’s statewide chat reference collaborative, considers librarians’ use of instructional techniques in reference transactions and their effect on patron satisfaction, as demonstrated through voluntarily completed exit surveys and within the transactions themselves.

One hundred and forty-five out of 149 usable transcripts exhibit instances of information literacy instruction; the instructional techniques that occur most frequently are those that involve locating and retrieving information. One hundred and twenty-one patrons reported complete satisfaction with their NCknows experiences through their exit surveys, while 16 reported that they were “somewhat satisfied,” and 12 conveyed dissatisfaction with their service. Patrons tended to demonstrate satisfaction most frequently when librarians directed them to the exact locations or URLs of sources, instructed them on negotiating the technical aspects of locating information, or informed them of library policies.

Headings:

- Information literacy
- Electronic reference services (Libraries) -- Evaluation
- Libraries -- User satisfaction
- Use studies -- Reference services
- Reference services (Libraries) -- North Carolina
LIBRARIANS’ USE OF INSTRUCTIONAL TECHNIQUES: EFFECTIVE IN ENHANCING CHAT REFERENCE SERVICES FROM THE PATRONS’ PERSPECTIVE?

by

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Introduction

Over the course of the past decade, due in large part to libraries’ increased migration of services and resources to the Internet, information professionals across the country have initiated reference services that transcend those typically provided at conventional reference desks. These services, dubbed virtual reference or VR, afford patrons the opportunity to converse with librarians about information needs ranging from the availability of desired books to advice on conducting advanced searches in online databases—all from the comfort and privacy of their computer workstations, through digital interfaces that mimic the look and feel of online chat rooms. Library staffs lacking resources to implement these programs or that wish to build on the successes that they have enjoyed locally have joined collaborative efforts, programs that are administered and funded by state libraries, county governments and university library systems and staffed by academic, public and specialty librarians in order to provide synchronous, real-time chat reference services to patrons twenty-four hours per day, seven days per week. Over a thousand libraries that have joined cooperative virtual reference services across the country subscribe to OCLC’s QuestionPoint, using specialized chat reference software and relying on QuestionPoint librarians to field questions from their patrons when local librarians are unavailable. One such consortium is NCknows, a chat reference service funded and administered by the State Library of North Carolina and serviced by academic, public and specialty librarians as a part of their
professional duties in libraries\textsuperscript{1} across the state. NCknows is intended to serve the citizens of North Carolina, but it may be used by any individual who accesses the NCknows link, which is displayed prominently on participating libraries\textsuperscript{2} websites (Crisp, 2004).

While NCknows was deemed successful enough during its pilot phase—between June 2004 and April 2005, librarians at ten academic libraries and eight public libraries provided approximately sixty hours of chat reference service per week; OCLC librarians staffed the remaining hours—to remain in operation and to continue to receive funding from the State Library of North Carolina, its administrators are still working to determine how it will evaluate itself and define “success” for its users and funding bodies.

NCknows is not alone: VR cooperatives across the United States have struggled to maintain or increase use from their patron bases (Coffman and Arret, 2004a, 2004b; Coffman, 2002). In order to help determine if programs like NCknows—programs often staffed by librarians whose backgrounds represent a range of professional philosophies, work experiences, and levels and types of training—are indeed meeting patrons’ needs, it is essential that regular evaluations be conducted, evaluations that take into account both the quality and completeness of the reference transactions as well as patrons’ opinions of the chat services they receive (Hyde and Tucker-Raymond, 2006; Pomerantz and Luo, 2006).

One critical element of reference transactions, acknowledged by the Reference and User Services Association (RUSA) in its Guidelines for Behavioral Performance of Reference and Information Professionals\textsuperscript{3} (2004) and described in more detail by the Association of College and Research Libraries (ACRL) Information Literacy
Competency Standards for Higher Education\(^4\) (2004) is the responsibility that librarians have to use instructional techniques “so that patrons can learn to answer similar questions on their own” (RUSA, 2004) and thereby increase their information literacy.

Practitioners in both public and academic libraries demonstrate that, because “information literacy efforts have accelerated since [the concept] was first mentioned…in 1974” (Eisenberg, 2004), it has become increasingly necessary to provide user education, either through structured, subject- or audience-specific information sessions or through individualized instruction at the point of need (Johnston, 2003; Wilson, 2003; Beck and Turner, 2001). While RUSA advocates that librarians serve as “learning facilitators” (Beck and Turner, 2001, p. 84) in several of its guidelines for reference and information professionals, there has been little research to determine whether or not patrons feel that their reference experiences are enhanced by the efforts that librarians make to instruct them—rather than simply avail them of the answers to their questions, which digital reference functions such as page pushing and co-browsing make tantalizingly easy (Johnston, 2003). This begs the questions: Do NCknows patrons’ voluntarily completed exit surveys and comments reveal that they want what librarians believe is good for them—lessons that grant them the ability to “recognize when information is needed and…locate, evaluate and use effectively the needed information” (ALA Presidential, 1989, p. 1)—or are they satisfied instead with straight-forward answers to their questions, independent of librarians’ instructional techniques that may help them acquire the skills necessary to locate similar information in the future? Do patrons request instruction when their librarians fail to offer it and, if so, what effect do those requests have on the instruction that transpires? Are there instructional techniques that tend to result in high
rates of patron satisfaction? This content analysis of transcripts acquired from a statewide chat reference collaborative aims to determine if librarians’ use of instructional techniques during their reference transactions leads to a higher rate of self-reported patron satisfaction than is reported when instruction is incomplete or absent—when librarians “just give patrons the answers” (Johnston, 2003, p. 32).

**Literature review**

As various formats of virtual reference technologies have emerged over the last several years, chat reference services have received a great deal of attention in the library and information science literature. Many librarians who have used virtual reference services have described the successes (or failures) that they have experienced, passing along lessons they have learned as they have implemented new technologies into their information centers (Bailey-Hainer, 2005, 2003). Others, including Chad Buckley (2006), Steve Coffman (2004a, 2004b, 2002, 2001a, 2001b) and Linda Arret (2004a, 2004b), have compared chat to traditional reference, opining on the shortcomings or advantages that they believe exist with respect to particular aspects of chat reference, including best practices for training librarians to use various technologies; the degree of formality with which librarians should communicate when using these digital formats; and the possibilities for collaboration among groups of public, academic or special libraries or geographical groups of multi-type libraries. Additionally, multiple step-by-step manuals for instigating, maintaining and evaluating effective virtual reference services in various types of libraries and for specialized user groups have been published (Kovacs, 2007; Ronan, 2003; Hirko and Ross, 2004).
While there is a great deal of anecdotal literature and a number of informal case studies aimed at guiding libraries toward designing successful virtual reference services (Bailey-Hainer, 2005, 2003; Buckley, 2006; Coffman and Arret, 2004a, 2004b; Coffman, 2002, 2001a, 2001b), there has been less empirical research conducted to answer questions critical to the longevity of chat reference: Is it an effective means for providing instructive reference service and, if so, what makes a transaction work particularly well for patrons? Further, which reference behaviors comprise transactions that patrons deem to be successful, perhaps even encourage them to continue to take advantage of VR services? Cummings, Cummings and Frederiksen (2007) attempt to answer these questions in their study of students’ individual choices to use (or not use) chat reference to meet their information needs. From their survey of nearly four hundred students at two campuses of Washington State University, Cummings, Cummings and Frederiksen (2007) found that users are “open to the idea of chat-based reference or using chat for some loosely defined research purposes” but that this “openness does not translate into a high level of use” (p. 91).

Pomerantz and Luo (2006) also recognize the importance of assessing the extent to which digital reference services meet users’ information needs. Their study transcends the traditional evaluative model for reference and chat reference transactions, which considers users’ overall satisfaction with their encounters, by also addressing patrons’ motivations to use the service, as well as their plans for using the information they received from it. They gleaned their data from exit surveys, which patrons voluntarily completed at the conclusion of chat reference transactions, and by conducting “semi-structured interviews” (Pomerantz and Luo, 2006, p. 355) with patrons within three
weeks of their chat reference sessions. While their study suffered from a low response rate (8.6% of users completed the exit surveys, and 1.6% of users were interviewed), it nonetheless presents a thoughtfully crafted method for conducting a “holistic assessment of the value of chat reference services” (Pomerantz and Luo, 2006, p. 370) and demonstrates the importance of gauging the benefit and utility—from the patrons’ perspective—of these rather costly digital reference programs.

Hyde and Tucker-Raymond (2006) went a step farther and evaluated not only patrons’ perceptions of chat reference services but librarians’ performance on individual transactions as it relates to user satisfaction. By studying the results of exit surveys, voluntarily completed by patrons at the end of their chat reference transactions, Hyde and Tucker-Raymond (2006) found that, as is often the case in face-to-face reference transactions (Applegate, 1993; Goldhor, 1979), an extremely high percentage of patrons—eighty-five percent, in fact—were satisfied with the service they received in chat reference transactions and that only four percent said that they would not use the service again. While they were obviously pleased with these figures, they decided that their exit surveys were not entirely effective in determining the quality of their chat reference service or predicting whether patrons would use their service again. In an attempt to capture a more complete assessment, they developed a set of nineteen standards against which they evaluated a sample of two weeks of chat transcripts, stripped of all identifying information. Among their nineteen measures is one that speaks directly to librarians’ use of instructional techniques: “The librarian offered or provided some instructional guidance, including the search process or strategy” (Hyde and Tucker-Raymond, 2006, p. 14). Two additional measures refer to instructional practices less
explicitly, asking that librarians “identif[y] and state search qualifiers that may limit results” and “br[eak] the search query into specific facets” (Hyde and Tucker-Raymond, 2006, p. 14). The data that resulted from this content analysis provided the authors and other evaluators with valuable information about the overall quality of and trends in their chat reference service and enabled them to cross-tabulate key measures with patron satisfaction (for instance, they found that patrons expressed a higher degree of satisfaction when a reference interview was conducted than when it was not). Hyde and Tucker-Raymond (2006) plan to continue to employ their multi-faceted approach to assessment, using their findings to set goals for improvement and to train future chat librarians. Their research demonstrates the value in and potential impact of evaluating chat reference transactions on the bases both of librarian-patron interactions and patrons’ overall satisfaction.

Like Hyde and Tucker-Raymond (2006), Kasowitz, Bennett and Lankes (2000) identify a working set of standards by which they may gauge the success of virtual reference programs and, as do Hyde and Tucker-Raymond, assert that a quality digital reference service is “instructive” (p. 355), offering “more to users than straight, factual answers” (p. 357) and working to “promote information literacy by responding with detailed search paths and sets of resources who either provide the answer or allow users to investigate on their own” (p. 358). Kasowitz, Bennett and Lankes (2000) maintain that it is essential not only that individual libraries meet and achieve the twelve criteria and goals that they outline, but that “cross-domain” digital consortia also conform to these standards (p. 363). Instructional techniques, therefore, need not be relegated only to school and academic librarians’ chat reference services; rather, they help comprise a set
of twelve standards that will foster quality reference service—and ultimately increase user satisfaction—in multi-type library consortia, as well.

Taddeo and Hackenberg (2006) focus sole attention on the instruction criterion to which Hyde and Tucker-Raymond (2006) and Kasowitz, Bennett and Lankes (2000) refer, noting that chat librarians have the opportunity to “create a positive teaching environment, prompting repeat visits” and “promote self-directed learning” (Taddeo and Hackenberg, 2006, p. 64). Similarly, Ellis (2004) notes that virtual reference librarians may prompt independent learning; further, she encourages them to incorporate into their work pedagogical practices based on the ACRL Information Literacy Competency Standards for Higher Education. Ellis’s (2004) study describes chat reference situations into which it is particularly appropriate to incorporate these five objectives and then analyzes the content of 138 transcripts taken from seven months of chat reference service at the Newman Library of Baruch College, determining the percentage of transcripts that teach one or more of the five ACRL Standards for Information Literacy Competency. Ellis (2004) concludes that, while many academic librarians are already using chat interactions to instruct students (65 percent of the transactions she analyzed included instruction on at least one of the five ACRL standards), there are many more opportunities for professionals to “reach users of all kinds, reinforcing information competency in ways that are developmental and integral” (p. 117, emphasis added), referring particularly to librarians’ responsibility to foster information literacy in students and non-students alike.

Johnston (2003) also directs her attention to the inclusion of instructional techniques in her relatively small content analysis of fifty questions answered by library
staff at the University of New Brunswick through its synchronous online service, LIVE. Johnston (2003) claims that librarians face a “professional paradox”: After devoting their careers to teaching library and research skills through carefully constructed instructional programs, “they suddenly find themselves building a digital reference service which just gives patrons the answers” (p. 31-32). As is the case in its face-to-face counterpart, Johnston (2003) believes that virtual reference transactions are enhanced when librarians resist the temptation simply to provide responses to queries requiring more than factual answers and, instead, offer individualized instruction so that patrons may “learn how to learn” (McCutcheon, 2001, p. 205). In fact, she asserts that instructional techniques are actually more effective in digital reference than they are in traditional reference services or course-specific instructional sessions, as digital reference services afford librarians the opportunity to provide “just-in-time and just-enough information and instruction” (Johnston, 2003, p. 33) and, further, enable students to access the service anonymously.

Of the transactions that she analyzed for inclusion of instructional techniques, ranging from suggesting databases to use for a particular search to explaining bibliographic records, Johnston (2003) found that 60 percent incorporated at least one “instance of instruction” (p. 32). Her study also includes an evaluation of voluntarily completed exit surveys, which reveal that patrons are happy with digital reference services; she did not, however, determine if there is any relationship with their level of satisfaction and the inclusion of what she believes are small, timely doses of teaching methods.

Ward (2004) conducted a similar study in his attempt to determine if the chat reference arena affords librarians adequate opportunities to provide library instruction and thereby do more than “spoon-[feed] complete citations and answers” (Ward, 2004, p.
47). Using the RUSA Guidelines for Behavioral Performance of Reference and Information Services Professionals as a foundation for his criteria, Ward (2004) contends that a “complete or ideal” (p. 50) digital reference session includes four parts: question negotiation, guidance to a specific database, suggestions for keywords or subject headings and tips for using the database, and confirmation that the sources have met the patron’s needs. He deemed 47 percent of the transactions he analyzed to be complete, including a proper opening and closing, as well as two instructional techniques; six percent included one or none of the four components. While Ward (2004) concludes that chat reference service should deliver the same quality of service that patrons have come to expect from face-to-face reference transactions, he does accept the notion that the digital environment presents librarians with the temptation to take shortcuts, to give answers rather than “take advantage of the teaching moment that these encounters provide” (p. 53). His study of the inclusion of instructional techniques is, therefore, an important one in determining not only the quality of digital reference services but also of the extent to which this medium succeeds in preparing users for negotiating future information needs.

Methodology

This latent content analysis mimics the methodology of Hyde and Tucker-Raymond (2006) and Johnston (2003) and adopts both Taddeo and Hackenberg’s (2006) and Ellis’s (2004) use of the ACRL Standards for Information Literacy Competency, as well as Ward’s (2004) use of the RUSA Guidelines (2004) for coding/definitional purposes. It echoes these researchers’ methodological decisions and, further, their stance that information literacy standards occupy a vital place in the chat reference arena in an
attempt to determine if there is a correlation between librarians’ use of these instructional techniques and self-reported patron satisfaction. This study analyzes individual transcripts recording the start-to-finish digital communication between patrons and librarians staffing NCknows, initiated when patrons pose questions through the digital interface. While NCknows is intended to serve the citizens of North Carolina, anyone with an Internet connection may log in and utilize the service. Patrons’ questions are answered by librarians at participating libraries in North Carolina and, when those librarians are unavailable, by librarians in the national QuestionPoint cooperative, thereby ensuring that patrons may take advantage of NCknows chat reference service twenty-four hours per day, seven days per week. The transactions analyzed in this study transpired between March 1, 2006 and August 31, 2007 and were recorded and archived as individual transcripts. All identifying data was stripped from the transcripts prior to analysis; this rendered the identification of participating librarians and patrons impossible, in keeping with the notion that “users expect that their privacy will be protected” (Nicholson and Smith, 2005) (Appendix E).

Only transcripts that had accompanying exit surveys, voluntarily completed by patrons at the conclusion of the transaction (and then archived and sanitized of identifying information), were used for this study. Individuals who acknowledge that they are under the age of 14 during their interactions with librarians or on the NCknows information form were excluded from the study, for the OCLC chat reference service keeps no records of transactions between librarians and minors under the age of 14. Additionally, patrons who reported their ages to be between 14 and 18 over the course of the reference transaction were also excluded from this study. Other transcripts that were
eliminated from this study were those that were recorded as “test” transactions (test transactions transpire between librarians for training or quality control purposes and are clearly marked as such in the resolution field of the transcripts) and those in which either the patron or the librarian was disconnected from the NCknows service before the completion of the reference interview. While some transactions ended prematurely due to technical difficulty, they were included in this study if the librarian and patron were able to engage in a reference interview and if the librarian was able to begin negotiating the patron’s request. Oftentimes, librarians continued to provide instruction or search for requested information even after the patron became disconnected, so this dialogue was coded accordingly.

Because this is a qualitative analysis, and because it was necessary to assess the effects of various instructional techniques (some of which occurred in very few transactions) on patrons’ perceptions of quality of their chat reference transactions, it was difficult to predict the number of transactions that would need to be analyzed before reaching “theoretical saturation” (Glaser and Strauss, 1967, p. 65). Therefore, the bank of NCknows transcripts was oversampled in order to attain data saturation and statistical significance using Pearson’s chi square, Pearson’s r and Spearman’s rho. Transcripts were drawn from eight institutions whose data was made available by the NCknows administrator for this study: Appalachian State University, Central Carolina Community College, Central Piedmont Community College, Edgecombe Community College, North Carolina A&T, Public Library of Charlotte-Mecklenburg, State Library of North Carolina, University of North Carolina-Chapel Hill, University of North Carolina-Greensboro, University of North Carolina-Wilmington and Wake Tech Community
College. In an attempt to achieve variety in the pool, these eight institutions were stratified into four subsets: community colleges, public libraries, special libraries and university libraries. Because this sampling frame included more transcripts and accompanying surveys than could be reasonably analyzed, 40 transcripts were randomly selected using simple random sampling from each of the four strata for an initial pool of 160 chat reference transactions. Theoretical saturation (Glaser and Strauss, 1967) was reached after these 160 transcripts were analyzed; thus, the sample was deemed sufficient for this study. Of this sample, a total of eleven transcripts were eliminated because they were identified as test transactions or they were terminated before the librarian could begin resolving the patron’s information need, leaving a stratified random sample of 149 transcripts.

Using the coding software ATLASi, transcripts were read and coded for inclusion of any instruction methods NCknows librarians employed in order to teach patrons how to use or find information in print or electronic form and thereby enable patrons to enhance their information literacy, as defined by Eiesenberg, Lowe and Spitzer (2004) in *Information literacy: Essential skills for the information age*, the ACRL Information Literacy Competency Standards and as referred to in select RUSA Guidelines for Behavioral Performance of Reference and Information Professionals. Because NCknows serves patrons who are not necessarily students in the traditional sense of the word, the standards outlined in Sondra Stein’s (2000) *Equipped for the future content standards: What adults need to know and be able to do in the 21st century* were used to round out those that explicitly address the needs of learners in grades K-12 and institutions of higher learning.
The codebook used for this latent content analysis is composed of five primary sections, representing ACRL’s five core Information Literacy Competency Standards, as well as their corresponding RUSA guidelines and the standards indicated by Stein (2000) (Appendix A). Examples of instructional techniques that may arise in chat reference transactions were drawn from ACRL’s information literacy competency objectives and, again, supplemented by Stein’s (2000) models: Examples include explaining how to narrow research topics; helping patrons access NC LIVE databases remotely; demonstrating how to evaluate a source for authority and relevance; guiding patrons in organizing information from multiple sources; and describing how to cite a source.

Additional sections of the codebook are related to teaching technical issues (e.g. using the Internet, emailing files, accessing passwords), informing patrons of library and NCknows policies and procedures and describing functions of the NCknows chat reference software.

For the purposes of this study, the definition of “instruction” is intentionally broad, for it is impossible to determine if librarian’s teaching method is instructive unless the patron explicitly states that he or she has learned from the transaction. Therefore, any word, phrase or sentence that had the potential to be instructive, according to the guidelines set forth by ACRL (2004), RUSA (2004) and Stein (2000), was coded as such. Further, passages were not limited only to one instruction code. For instance, a librarian might suggest a particular feature of a database and explain the best method for conducting a search using this feature in a single passage. Because such a phrase or sentence represents more than one instructional technique, multiple codes were applied (i.e. “search method” and “tool”). Similarly, individual transactions were not limited in
their numbers of codes. If a librarian revealed five “tools” a patron should consider using or four “search methods” in a single encounter, each passage within the transcript was coded to reflect that fact.

Transactions were also analyzed in terms of librarians’ effectiveness in providing instructional techniques: Drawing on Ward’s (2004) definition of “complete” (p. 49), transcripts containing a reference interview, one or more “instances of instruction” (Johnston, 2003, p. 32) from at least two of the five information literacy categories and an attempt by the librarian to determine that the patron understood his instruction were deemed “excellent” (for samples, see Appendix F). Also noted were transactions that contain unclear or incomplete instances of instruction, as well as situations in which librarians missed opportunities to instruct their patrons on various aspects of information retrieval. Finally, a notation was made if patrons explicitly requested instruction within a transaction (e.g. “can you tell me how to find more articles like this one?”; “I need help looking up DVDs in the catalog”).

Patrons’ exit surveys, voluntarily completed at the end of the transactions, were also analyzed, particularly with respect to the first questions (there were variations in the first questions in the surveys that accompanied the sampled transcripts, Appendix C): “How satisfied were you with the answer that you received?” (Answer choices: Satisfied, Somewhat Satisfied, Dissatisfied) and “Did you receive sufficient information in response to your request?” (Answer choices: Negative or No, Neutral or N/A, Positive or Yes) and to the second question: “The quality of the library staff service in answering this request was: Excellent, Good, Average, Poor.” Patrons were deemed to be satisfied if they responded with “Satisfied” or “Positive or Yes” or “Neutral or N/A” to question
one or “Excellent” to question two. They were believed to be somewhat satisfied if they answered “Somewhat Satisfied” or “Neutral or N/A” to question one or “Average” to question two. Their satisfaction level was recorded as dissatisfied if they answered “Dissatisfied” or “Negative or No” to question one or “Poor” to question two. Unlike the codes related to librarians’ use of instructional techniques, these codes are mutually exclusive. Therefore, each of the 149 coded transactions received one and only one code related to survey satisfaction.

Patrons’ free-response comments, which appeared in the “Additional Comments” portion of the survey, as well as in the reference transactions themselves (e.g. “thank you, that’s exactly what I needed”; “you’ve been so helpful”; “you haven’t given me what I asked for”) were also coded. Finally, because research shows that patrons often express a high degree satisfaction with face-to-face reference transactions even when they do not receive the information they have requested (Dewdney and Ross, 1994; Applegate, 1993; Goldhor, 1979), codes were devised—“transcript satisfaction-info not received”; “transcript satisfaction-info received”—to help determine if this anomaly is evident in digital reference transactions, as well.

Before coding began, this codebook was reviewed by faculty member Jeffrey Pomerantz, as well as by one instruction librarian and one public librarian for accuracy and completeness. Because additional instructional techniques or aspects of the digital reference transaction that had not been included in the codebook surfaced over the course of the analysis, the codebook was revised accordingly (Appendix B). For instance, the fact that patrons explicitly request instruction over the course of the transaction was not accounted for in the original codebook. The category “excellent” was created in order to
group transcripts that are particularly effective in terms of delivery of instruction. Additionally, descriptions of codes were refined to reflect more accurately the instruction that took place in the transactions. For example, the “tools” code was changed to incorporate librarians’ instruction on online databases as a library tool used to acquire, process and manage information. The code “sources” was split into “potential source,” “source revealed” and “source info” to clarify the granularity of this technique that coding revealed.

Finally, several codes that were applied very few times were collapsed into categories for the purposes of testing statistical significance. For instance, the “ethics,” “copyright” and “citing sources” codes were merged into one code, as there were no instances in which a librarian instructed on ideas related to “copyright” or “ethics” without also referring to the importance of citing sources properly and consistently. In order to include records of this type of instruction in the statistical analysis, dialogue related to any of these three categories was coded as “citing sources.” Similarly, “evaluation” subsumed “results interpretation,” “results efficacy,” and “satisfaction.” “Info use” and “synthesis” became “info use,” and instruction related to “catalog classification,” to “library policies” and to “library services” was simply coded as “library policies.” The code “VR” was deemed unnecessary, for instances in which librarians instructed patrons on the purpose of the chat reference collaborative or using functions of the NCknows software (e.g. co-browsing, page-pushing) fell neatly into those passages labeled as “NCknows.”

The statistical package SPSS was then used to determine if there is a statistically significant correlation between patrons’ self-reported satisfaction with the quality of the
library staff service that they receive, as demonstrated through their completed surveys or free-response comments, and the methods librarians use to instruct them throughout their chat reference transactions. The null hypothesis for this study, “patron satisfaction is independent of librarians’ use of X instructional technique,” where X is any instructional technique detailed in the codebook, was rejected if the association was deemed significant at the .05 level, using Pearson’s chi square. If this null hypothesis could be rejected, the strength of the correlation between instructional technique X and patron satisfaction was determined using Spearman’s rho or Pearson’s r. In an effort to determine which particular aspects of the digital reference transaction tend to lead most frequently to patron satisfaction—or dissatisfaction—statistically significant correlation was also tested between levels of patron satisfaction (once again, as revealed both through patrons’ surveys and in the transactions themselves) and transcripts that were deemed to be “excellent” or that included any of the following: patrons’ requests for instruction, missed opportunities to instruct, or unclear instances of instruction. Because there were too few transactions including no instructional techniques (and, therefore, coded as “none”) to result in statistical significance, transcripts with this code were not included in the tests.

Results

First, it is useful to assess the nature of the instruction that transpired within the 149 transcripts that comprise this study. Somewhat surprisingly, instructional techniques were evident in all but four, or 3.68%, of the usable chat reference transactions. Of course, because “instance of instruction” (Johnston, 2003, p. 32) is broadly defined in this study, there are six transcripts whose sole instruction is related to the NCknows service
itself (e.g. “I am a reference librarian with the Question Point chat service and we are here to answer your questions 24/7 when your local librarians are unavailable”). Because it is valuable for patrons to understand the nature of the NCknows reference service, including that transcripts are emailed to patrons at the conclusion of the transaction and that the librarian staffing NCknows may not be associated with the patron’s home library, however, these passages were considered instructional and coded as such. Similarly, a number of passages work to apprise patrons of specific library policies and procedures (e.g. NC LIVE databases require a password; the reference desk at Appalachian State University closes at 6:00 p.m. on Fridays). While these techniques are not directly related to ACRL’s Information Literacy Competency Standards, they do help to inform users’ understanding of the NCknows chat reference service and their libraries and thereby contribute to their success in negotiating their future information needs. Further, the overwhelming majority of the 92 passages that inform users of NCknows policies and the 58 passages that refer to general library policies and procedures appear alongside additional instances of instruction, many of which are directly related to ACRL’s five core standards.

A. Inclusion of instructional techniques

Because the codebook used for this content analysis was developed to reflect the five ACRL Information Literacy Competency Standards, the results shall be considered in terms of these broad categories. Standard one, which refers to the nature and extent of information patron needs, includes methods described by the following codes: info need, prior info, info production and info type. Because a number of the components of standard one are related to the reference interview and not information literacy skills per
se, those passages in which patrons describe their information needs or that explain what they already know about a topic were not coded. On the other hand, passages in which librarians instructed patrons on how they might narrow their questions or understand more about the nature of the information they wish to find were coded as instructional. The following serves as an example of a librarian helping a patron define his information need in terms of the disciplines into which his question falls and the sources he may use (note that all passages are taken directly from transcripts and have not been edited):

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Patron: Compare how social dancing changed between the 20 & 50’s and how it affected family values
Librarian: This is a difficult question to answer because it’s part sociology and part social history. Let me see if I can find something about how the dancing changed first.
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Librarians help patrons identify key concepts and terms that describe their information needs (“info need”), as demonstrated in this passage, just five times throughout the sample.

Therefore, because many of the codes associated with this standard are related most closely to the reference interview, they were applied to few passages: Librarians formally instruct patrons on the nature of their “prior info”—rather than simply refer to it as they conduct reference interviews—in just two transactions, and instruction related to “info production” does not appear at all. The remaining code, “info type,” was more pervasive throughout this sample, for librarians help patrons define the type of information they need or find in twelve transactions. These instances often involve
describing various formats and distinguishing between popular and scholarly sources or primary and scholarly sources, as in this example:

| Librarian:  this site is good--you can use the search box at the top--look at the page and scroll down, there's a graph about diversity http://nces.ed.gov/programs/quarterly/vol_2/2_3/cross_coe.asp | Patron:  okay i will look and would this be a primary resource or an internet one |
| Librarian:  well, it's a secondary source that happens to be on the internet. It's a U.S. government site, which is a lot more reputable that some person's personal website |

The ACRL Information Literacy Competency Standard that librarians most frequently address in this sample is the second one: “The information literate student accesses needed information effectively and efficiently” (ACRL, 2004, p. 9).

Instructional methods related to this standard are defined by the following codes: potential source, source revealed, source info, referral, search method, tools and retrieval. The technique used most frequently in the 149 transcripts, appearing in a total of 117 passages, is “potential source,” which informs patrons of where librarians believe they may find requested information (e.g. U.S. Census, Academic Search Premier, the OPAC, The Charlotte Observer). The second most frequently occurring method is “source revealed” (110 passages), which transpires when librarians provide links to catalog records, websites or the names of specific sources where they have either found patrons’ requested information or believe it to exist. Librarians provide background information,
“source info,” about a source in addition to its URL or title in 42 passages, including the following:

Librarian: I am going to send you a page on planning books for small businesses, let me know if you can see it

Librarian: http://ipac54.plcmc.org/ipac20/ipac.jsp?session=1 JR15368 8 Y90211265&profile=plcmc&uri=link=3100026~!137990~!3100001~!3100053&aspect=basic_search&menu=search&ri=3&source=~!plcmc&term=Small+business+--+Planning&index=PSUBJ#focus

Patron: Yes

Librarian: If I were you, I think I would set aside some time to look at these and use the table of contents to find

Librarian: the part of the book that talks about a startup budget or estimating costs

Patron: I will do that.

This patron receives not only a display of titles but also instruction on using the sources’ tables of contents. Likewise, the librarian in the following excerpt provides a snippet of useful information about a suggested site rather than simply sending the URL alone:

Patron: thank you is there any other sites that might help have some information to

Librarian: well -- this site lists contact info by county

Librarian: <http://www.rurdev.usda.gov/nc/do-list.htm>
The code “referral,” appears in 37 transactions and, in six transcripts, is the sole instructional technique. In these instances, librarians realize that the requests are out of their scope and so refer patrons to subject specialists or to their home libraries:

Librarian: Oh, I understand. You need to know if they have ordered this book and if it will be in the library after it is released.
Patron: i don’t need to know if they have ordered the book but i guess my question is can they order the book which will not be in print til later....
Librarian: Every library has different ordering procedures. I think it would be best if you contacted the Charlotte library directly. That number is Call (704) 336-2725.
Patron: okay..great! i will give them a call now...thank your help,,have a good day..bye

This passage is still considered instructive, as the patron learns that collection development policies vary among libraries and, further, how she may contact her home library directly.

The code “search method” appears 81 times and indicates that a librarian walks a patron through a search rather than simply providing a potential source or link to a website or catalog record that the patron is then expected to search on her own. For instance, this librarian reveals the source he has used to find the requested information and, in addition, describes how he conducted the search so that the patron may repeat his technique, if necessary:

Librarian: I see a lot of references to a tired body and a restless mind.
Librarian: I went here:
Librarian: http://books.google.com/bkshp?hl=en&tab=wp&q=
Librarian: And I did a search for the quote you gave me.

Librarians revealed “tools” (e.g. databases, OPAC, Google) that patrons may wish to use in order to find information or that they themselves used when searching for patrons’ requested information a total of 75 times. As is the case in describing search methods and potential sources, the best instances of instruction surrounding “tools” occur in tandem with other methods, as in this case, where the librarian walks her patron through the “search method” she used when using the online catalog, an effective “tool” for fulfilling this patron’s request:

Librarian: First of all, do you know how to get to your library catalog online?
Patron: Hmm....not really
Librarian: Try going to this URL:
Librarian: http://louise.nccomunitycolleges.edu/uhtbin/cgisirsi/
ICDE02C94n/WAKE/91400291/38/1/X/BBLASTOFF
Patron: Oh yea...thats right..remember that now
Librarian: Do a search for stress reduction and see if either of those books work out for you.

Finally, librarians provide instruction on retrieving information (“retrieval”) in 22 transactions, most frequently in instructing patrons on using their libraries’ online catalogs or Interlibrary Loan systems:
Librarian: The library has the issue you need on microfiche

Patron: Okay, how does that work for off-campus students?

Librarian: Let me check the policies

Librarian: Distance Learning Students: information on requesting services

Librarian: http://www.library.appstate.edu/distance_learning/requesting/index.html

Librarian: this is the website specifically for articles

Librarian: http://www.library.appstate.edu/distance_learning/requesting/articles.html

Patron: So I can request it as if it were a book, and then take it to my local library and see it in their fiche machine?

Librarian: No the last web site I sent has the information on how to request articles

Patron: I am new at this, sorry, my first semester.

Librarian: Here is the catalog record for Nation

Librarian: http://wncln.wncln.org/search/jNation/jnation/1%2C389%2C404%2CB/frameset&FF=jnation&1%2C1%2C

Librarian: You can also call Toll Free 1-877-423-0086 for additional assistance

Patron: That is great, thanks so much.

Information Literacy Competency Standard Three refers to ways in which users “evaluate information and its sources critically and incorporate selected information into patrons’ knowledge bases and value systems” (ACRL, 2004, p. 11). Fifteen chat
transactions contain instructional techniques related to this standard. In many of these, librarians offer their opinions on a source’s accuracy or authority in an effort to inform patrons on the importance of this aspect of using and evaluating information. Others ask patrons to consider how useful or relevant a particular source is in terms of his particular request. The following transaction incorporates the many of the ten techniques associated with standard three, grouped into the single category, “evaluation”:

| Librarian: Here is another government site about Scottish culture. When you do these searches yourself, you may want to try your keywords (Scotland, culture) along with “gov.uk.” This will help you find government publications, which are likely to be more reliable. Librarian: [link to website] Librarian: Here is another website. Patron: ok Librarian: How much information do you need? Would you like me to keep looking? And are these websites helpful to you or do you need different information? Patron: i think that these are a good place to start. Patron: i will come back if i need more |

ACRL Standard Four, which refers to ways that patrons may use information in order to accomplish a specific purpose, is referred to fewer times than any other standard in this study. The code describing the way in which librarians teach this standard, “info use,” appears in only six of the 149 transcripts. It is clear in this transaction that a
frustrated patron needs help organizing the information that he is “pulling up” into an outline for his speech:

Patron: it’s like i’m pulling up information about it, just PULLING UP information, read it over and over again i can’t get anything out of it

Librarian: OK, I just did a google search for “positive aspects globalization” (without the quotes) and there are some interesting hits, including this one: http://www.uiowa.edu/ifdebook/ebook2/contents/part3-.shtml

Librarian: I think you might want to list a few areas that are very much involved in globalization - like creation of consumer goods, information technology, etc. then if you already have the “against” info - try to reframe it into a positive side

It is alarming that there is not more evidence of librarians helping patrons to evaluate or synthesize the information that they find, especially given the overwhelming number of results patrons may draw from a simple OPAC or Google search.

ACRL Standard Five refers to ways that users come to understand the “many economic, legal and social issues surrounding the use of information and ways to access and use information ethically and legally” (ACRL, 2004, p. 9). Much like standard four, librarians contribute to patrons’ understanding of this aspect of information literacy fairly infrequently, informing users of “citing sources,” “ethics” or “copyright” in eleven transactions. As is the case for nearly all digital reference transactions, the most successful instruction related to this standard incorporates many aspects of information
literacy. This transaction, for instance, speaks to evaluating and understanding types of sources in addition to citing them:

Patron: okay i will look and would this be a primary resource or an internet one
Librarian: well, it’s a secondary source that happens to be on the internet. It’s a U.S. government site, which is a lot more reputable that some person’s personal website
Patron: okay so how would i cite this using MLA?
Librarian: http://nces.ed.gov/das/epubs/2002168/profile3.asp
Librarian: try going to this cite and putting in your info (it will generate a citation for you) http://citationmachine.net/index.php?source=16#here
Librarian: sorry, just go to http://citationmachine.net/index.php?source=16#here
Patron: okay thanks so how do i get the info to put in there
Librarian: using this might be a better way to cite that webpage http://citationmachine.net/index.php?source=14#here
Librarian: you'll go back to the article and look for things like the date, the organization would be the National Center for Educational Statistics, the title would be Educational Statistics Quarterly, etc. the URL is the long http in your web browser
Patron: okay i can do that thanks is there anyway i can save all of this on my computer
Librarian: you’ll get a transcript of this conversation in your email
This librarian thoroughly instructs his patron on using Citation Maker, incorporating examples and even a description of “URL” into his explanation. He also explains that the patron will receive a transcript of their conversation, complete with the websites he has referenced.

A final aspect of instruction that does not fit neatly into any of the five above-mentioned categories but is, nonetheless, instrumental in teaching users to locate and evaluate information was described by the code “technical.” This code refers to instances in which librarians help patrons use technology (e.g. email, storage devices, the Internet, plug-ins, printers and other hardware) or negotiate the technical aspects of the OPAC or other online database, often related to using logins and passwords. While these references to the technical aspects of accessing information frequently occur alongside other instructional techniques, an effective transaction is incomplete without them:

Librarian: Are you all set with using the resources in NCLive, now that you have the password, or would you like some assistance?
Patron: when I just tried to login it said my password was incorrect
Librarian: That's not good! Let me check on that--I'll be back in a minute.
Patron: it said I have entered an invalid library password combination
Patron: ok
Librarian: Savannah, I'm not sure why you received that message--I just
logged in, using the password I sent you, and it worked.

Librarian: It would be worthwhile to try again...

Patron: the password is c82lhccr.... am I typing it right?

Librarian: What I did when it worked for me was choose your college from the drop-down list of institutions, and then I copied and pasted the password I sent you into the password box to make sure that I didn't make any mistake!

Librarian: No--I see the problem--you have an “L” for an “I”

Librarian: The password is c82ihccr

Librarian: It is hard to tell the difference on the screen!

Patron: oh ok ... i will try that then....oh ok I will try to copy and paste it then

Librarian: Let me know if it works--it should though!

Patron: yep .. it worked that time.. thanks !!

Librarian: Great! Are you all set or do you need some help with the databases?

The instruction that this librarian offers on using NC LIVE’s online databases is worthless if his patron does not understand how first to access them, evidenced by the fact that this type of “technical” instruction appears in 32 passages in this sample.

B. Quality of librarians’ instruction

This study concerns itself not only with types of instruction in terms of the above-mentioned ACRL guidelines, but also with the quality of this instruction. A number of chat reference transactions successfully incorporate techniques from two or more of the
five broad categories that comprise ACRL’s Information Literacy Competency Standards, include a thorough reference interview and conclude by confirming that patrons understand how to find sources appropriate for their information needs. These 19 transactions stand out from the others in both effectiveness and completeness. In the following excerpt from such a transaction (see Appendix F for full transcript), the librarian attends to all aspects of his patron’s query and addresses four of the five ACRL standards, ensuring that he may conduct a similar search on his own following their work together:

Librarian: what college do you attend?
Librarian: I can help you with their resources
Patron: I attend Ab tech
Librarian: as that is what your professor will want you to use
Librarian: I am sorry, I am a librarian in Texas
Librarian: what does AB Tech stand for?
Patron: Asheville Buncombe Technical Community college
Librarian: http://www.abtech.edu/LRC/nclive-databases-offcampus.asp
Librarian: here are some of your library databases that you have access to from off-campus
Librarian: can you see what I sent?
Patron: will i need a password for this?
Patron: yes
Librarian: yes
Librarian: you will need your library card barcode
Librarian: do you have it?

Patron: yes

Librarian: great

Patron: let me get it right fast

Librarian: the Gale Literature Resource Center will have a lot of journal articles

Librarian: what exactly are you studying about Austen?

Patron: well i have to do an annotated bibliography of two journal articals...i am reading pride and prejudice

Librarian: oh ok

Librarian: great

Librarian: so when you log in to the Literature Resource Center you can do a subject search on Pride and prejudice

Librarian: or a Keyword search on it

Patron: ok...cool

Librarian: there should be tons

Patron: i have my card...do u need some info from it

Librarian: you could also do an author search on Jane Austen

Librarian: I don't

Librarian: you can go ahead and log in if you want

Librarian: or try it on your own and come back if you need more help?

Patron: ok...thank u so much!!!
The librarian provides background information about both the NCknows chat reference service and the resources available to this patron through his community college, and helps him clarify his information need (“what exactly are you studying about Austen?”) before explaining several effective search strategies. Further, he does not conduct the search for his patron but, rather, ensures that his patron is comfortable with the database and search terms that he has suggested before logging off (“or try it on your own and come back if you need more help?”). In so doing, he provides the underpinnings necessary for this patron to develop information literacy skills necessary for him to conduct effective college-level research.

In many transactions, however, librarians provide answers to patrons’ questions, yet miss the opportunity to instruct them on how they may locate answers for themselves. This occurs in 36 passages in 35 separate transcripts, representing 23.49% of the usable sample. It is evident, for instance, that the patron in the following interchange would benefit on instruction related to her search of Academic Search Premier:

```
Patron: yes and I was told you can find these articles online at uncw.edu but I am unsure of how to do it?
Librarian: One moment please
Patron: ok
Librarian: Here is the link to access the Criminal Justice - Databases http://library.uncw.edu/web/research/subjects/criminal/databases.html
Librarian: A good starting point is with Academic Search Premier
Patron: one moment
Patron: they are academic articles?
```
Librarian: The databases have scholarly abstracts and full text articles.

Librarian: Can I help you with anything else?

Patron: one moment

Librarian: Do you have enough information to continue on your own?

You can always log in again if you have more questions.

While this librarian does, strictly speaking, answer this patron’s initial query, she misses the opportunity to instruct her on using search features unique to Academic Search Premier. She also falls short on answering her patron’s second and, perhaps more pressing, question: “They are academic articles?” It is obvious from the patron’s initial and follow-up questions that this aspect of her search is especially important, yet this librarian fails to provide additional instruction related to distinguishing scholarly from popular materials as she locates and evaluates information through Academic Search Premier.

While this patron indirectly asks for instruction on the definition of an “academic article” from her librarian, there are instances in which patrons very clearly request information, in some cases because their librarians do not automatically offer it, nearly missing the opportunity to instruct, as is illustrated in the excerpt above. In others, patrons open the reference transaction by asking for instruction on locating information, as opposed to a direct answer to a straight-forward question:

Patron: I am having difficulty searching for a topic. How do I narrow down the topic so that I get better results?

Librarian: First, what type of information do you need?
Patron: I am doing a argumentative researched essay and my topic is: should gays be denied the right to the DNR order (do not recusitate)

Librarian: Okay—Have you done a search in the library’s databases or catalog?

Patron: Yes I have, I’ve searched on Ebsco, and some Infotrac. the info I get back isn’t exactly what I’m looking for

Patron: My search quotes may not be good enough

It could not be clearer from this patron’s initial and follow-up question that she could benefit from instruction related to modifying the “information need to achieve a manageable focus” (ACRL, 2004, p. 8) and selecting “efficient and effective approaches for accessing the information needed from the investigative method or information retrieval system” (ACRL, 2004, p. 9). And this patron is not alone in her request: Patrons explicitly ask for instruction 27 distinct times, expressing a desire to become self-sufficient in their interactions with information. For instance, one patron tells his librarian, “Or if you could tell me the search engines maybe I can find it by myself.” In such situations, it should not be difficult for a librarian to follow her patron’s lead and provide information that not only addresses the heart of her patron’s query but also enhances her information literacy. The librarian in this particular transaction does just that:

Librarian: Your library catalog has books on gay rights

Patron: Where did you find them

Patron: I have to borrow them from the library?
Librarian: I can show you
Librarian: http://library.ncat.edu/screens/setscope.html
Librarian: Link to your library catalog

Patron: ok
Patron: im there
Librarian: From there you can do a keyword search for gay rights

Unfortunately, not all transactions include explanations of locating, using or evaluating information that ensure that users will be successful in conducting future research independently. The patron in the following transaction, much like the one featured above, explicitly requests instruction related to selecting “an appropriate documentation style and uses it consistently to cite sources” (ACRL, 2004, p. 14). While the librarian in the following transaction begins to instruct her patron on citing this source, her explanation is not complete, and it is obvious that she has copied and pasted part of a record (“First Page of this journal issue: A note on viewing the plain text of this volume”) that makes little sense in the context of her dialogue:

Patron: I can probably use it but would I cite it as a website or what?
Librarian: you would cite it as an online source
Librarian: Title: The North American review. / Volume 143, Issue 359
Publisher: University of Northern Iowa Publication Date: October 1886
City: Cedar Falls, Iowa, etc. Pages: 656 page images in vol.
Librarian: This journal issue: http://cdl.library.cornell.edu/cgi-bin/moa/moa-cgi?notisid=ABQ7578-0143&byte=103821688; First Page
Once again, this patron is not alone in the fact that his request for instruction is met by an unclear or incomplete explanation: A total of 25 passages in this study include incomplete or unclear instructional techniques, and 13 of the 27 patron requests for instruction occur in transactions in which librarians also miss the opportunity to instruct their patrons or provide unclear instruction on the same topic about which patrons request instruction. Unfortunately, it is sometimes difficult for librarians to determine that additional instruction is necessary in the online environment. The librarian may believe that this patron is satisfied with the instruction he has received, for he demonstrates a degree of understanding by saying “okay.” It is doubtful, however, that he will be able to cite this journal article properly, for the librarian does not clearly state the procedure for citing this “online source” and, further, potentially confuses the patron by providing superfluous information from the journal record.

C. Evidence of patron satisfaction

Determining the ultimate effectiveness of an NCknows librarian’s instruction is indeed difficult, for the degree to which a patron integrates tips for searching or evaluating a source into his information literacy cannot be captured from a transcript recording a seven- or twelve-minute reference transaction. It is possible, however, to gauge patrons’ self-reported satisfaction with the quality of the librarian’s service and the information that was provided when patrons choose to complete exit surveys following their chat reference transactions. An overwhelmingly high percentage of patrons do indeed report satisfaction with their experiences with NCknows: One hundred and
twenty-one of 149 patrons, or 81.21%, report complete satisfaction; 16, or 10.74%, users report that they are “somewhat satisfied” with the service or information that they receive; and only 12, or 8.05%, patrons report dissatisfaction with both the quality of the service and the information that they receive. Because the NCknows surveys do not explicitly address librarians’ effectiveness as teachers, it is also useful to consider the degree of satisfaction that NCknows users express within the transactions themselves: Eighty-two of the 149 users (55.03%) in this study explicitly demonstrate satisfaction with their service or the instruction they receive through either the free-response sections of the surveys or over the course of their reference transactions. Oftentimes, patrons express satisfaction not only with the information but also with the instruction that they receive, as demonstrated in the following transaction:

<table>
<thead>
<tr>
<th>Librarian: Have you searched the databases your college subscribes to?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Librarian: <a href="http://www.cpcc.edu/library/db_test/defaultBySubject_dhtml.asp#Arts%20Humanities%20&amp;%20Literature">Link</a></td>
</tr>
<tr>
<td>Librarian: I would search these on Literature</td>
</tr>
<tr>
<td>Patron: yes I tried academic search premire</td>
</tr>
<tr>
<td>Patron: Ok I did not know this page</td>
</tr>
<tr>
<td>Librarian: How about Critical Companions or Literature Resource Center</td>
</tr>
<tr>
<td>Patron: I did not know about them either. I will try them. Should I just type them using like google?</td>
</tr>
<tr>
<td>Patron: now I got it they are on the web you gave me.</td>
</tr>
<tr>
<td>Librarian: You need to search all the databases your school has that might have information about your book.</td>
</tr>
</tbody>
</table>
Patron: Thanks now I know where to find.
Patron: That really helped Thank you so much

Only two patrons express dissatisfaction in the course of the transaction, and one of these instances is through no fault of the librarian, who works to pacify—and, further, instruct—this patron even after she has signed off, frustrated and befuddled:

Patron: know what, dont worry about it, you have done nothing but send me around in circles, and I still cannot get into the database that I need to get into, you dont read what I typed to you because I had to tell you which database 4 or 5 different times and considering that I contacted you through nc live you should at least know which database I'm talking about
Patron: Patron ended chat session.
Librarian: Ah. So sorry I was not able to help with what you were trying to do. I am not an employee of NC LIVE, but a librarian staffing NCknows, a completely different service. Just to clarify for future sessions, NC LIVE is not a database by itself, but a large collection of different databases on many different topics. When you get into NC LIVE, the service, you will still have to choose which particular database you want to access to do your research. Hope this helps explain things a bit. Thanks for using NCknows (a statewide reference service, designed to help library users with any research-related questions, not just those pertaining to NC LIVE.)
D. Patron satisfaction in terms of instructional techniques

Because 97.32% of the transactions in this study include some sort of instruction, it is not worthwhile merely to attempt to correlate patron satisfaction or dissatisfaction with the inclusion or exclusion of instructional techniques. It is useful, however, to determine which of the various instructional techniques most frequently lead to patron satisfaction: There is statistically significant correlation between patron satisfaction demonstrated through exit surveys and librarians’ instruction related to library policies, the technical aspects of using or locating information and the exact source used to negotiate an information need (“source revealed”).

Correlation is evident more frequently when satisfaction is analyzed in the body of patrons’ chat transactions (“transcript satisfaction”) than when it is analyzed in exit surveys (“survey satisfaction”). Approximately 82 of the 149 patrons (55.03%) in this study display their satisfaction through the free-response “additional comments” section of the exit survey and in the bodies of the transactions themselves, rather than in the exit surveys alone. When measured this way, there is a significant relationship between patron satisfaction and nine instances of instruction, as opposed to the three that correlate to satisfaction when it is gleaned from patrons’ exit surveys.

When patrons’ queries are answered, there is statistically significant correlation between “transcript satisfaction” and the instructional techniques described by the following codes: technical, info type, source revealed, retrieval, referral, potential sources, evaluation and citing sources. When information is not found, there is correlation between “transcript satisfaction” and a smaller set of instructional techniques: search method, tools, referral and evaluation.
Perhaps it is unsurprising that there is correlation between “transcript satisfaction” and “survey satisfaction” when patrons receive information they sought in their initial queries. Interestingly, however, there is no correlation between “survey satisfaction” and “transcript satisfaction” when patrons do not receive desired information from librarians; in these situations, patrons tend to record instead that they are “somewhat satisfied” in their exit surveys.

Because this study focuses not only on the discrete instructional techniques librarians employ and whether or not information is found but also on how thorough they are in teaching these techniques, it is useful to consider the potential relationship between patron satisfaction and the quality of librarians’ instruction. It is somewhat surprising that there appears to be no correlation between transcripts deemed “excellent” in terms of instruction and patron satisfaction of any type (e.g. “survey satisfaction,” “survey somewhat satisfied,” “transcript satisfaction”).

One must also consider patron satisfaction in terms of such aspects of the transactions as patrons’ requests for instruction, librarians’ missed opportunities to instruct their patrons or unclear instances of instruction. While there appears to be no relationship between patron satisfaction of any type and their requests for instruction or transactions that contain missed opportunities for instruction, there is correlation between transcripts that include unclear instances of instruction and instances in which patrons report that they are “somewhat satisfied” in their exit surveys. Likewise, transactions bearing unclear instances of instruction have a significant relationship with the following instructional codes: technical, retrieval and evaluation. Finally, the librarians who do not fully instruct patrons tend also to miss opportunities for instruction.
Additionally, while there is no correlation between patrons’ requests for instruction and their satisfaction on any level, there is a significant relationship between their requests for instruction and the following methods: library policies, info type, tools, search method and evaluation. Further, transactions that include explicit requests for instruction also tend to exhibit librarians’ missed opportunities to instruct their patrons or, interestingly, be deemed “excellent.” Finally, “excellent” transactions are statistically likely to incorporate the following instructional techniques: library policies, info type, potential sources, source info, source revealed, search method, tools, referral, retrieval and evaluation.

Discussion

First and foremost, this study reveals that instruction, as defined in this study, is pervasive throughout chat reference transactions conducted within the NCknows collaborative. While Ellis (2004) and Johnston (2003) found only 65 percent and 60 percent, respectively, of the chat reference transcripts in their reviews to contain instructional techniques, nearly 97 percent of the transcripts analyzed for this study contain some form of instruction. Much as Ellis (2004) found in her study of the teaching that goes on in digital reference, the majority of these instructional techniques are related to “accessing needed information effectively and efficiently” (ACRL, 2004, p. 9) and, more specifically, the techniques coded as “potential source” and “source revealed.” This is not surprising, given that most users believe that the purpose of the reference transaction is to ascertain information, or answers, related to their direct questions. As Johnston (2003) notes, the online environment perhaps feeds this perception, for patrons expect immediate answers to their questions, oftentimes facing
time constraints or lack of mobility (“I am at home and we had fall break today and yesterday so they may not even be open,” one patron says of his primary institution, for example). Moreover, the online arena makes it tempting simply to push a website to a patron rather than describe how a user may go about finding that website for herself. Despite the fact that this analysis found more transactions to include instruction than did Ellis’s (2004) and Johnston’s (2003), this study demonstrates that librarians do indeed succumb to the temptation simply to “give patrons the answer” (Johnston, 2003, p. 32), for thirty-five transcripts (23.49% of the transcripts in this study) include instances in which librarians miss an opportunity to instruct patrons on a topic that may result in their enhanced information literacy, as defined by ACRL (2004), RUSA (2004) and Stein (2000). In other situations, it is evident that librarians themselves may have been pressed for time or unsure of how to provide outstanding instruction in the online environment, for 25 passages include librarians’ unclear or incomplete attempts at instructing their patrons.

Still other transcripts, however, include stellar examples of librarians’ taking the time to provide patrons not only with answers but also with techniques that will help them locate, evaluate and use information in the future. A total of 19 transcripts (12.75%) were identified as “excellent,” containing a clear question negotiation phase, multiple instances of instruction related to at least two of ACRL’s Information Literacy Competency Standards and confirmation that users understood their librarians’ instruction. While this percentage is significantly lower than the 47 percent of transactions that Ward (2004) found to be “complete,” it nonetheless affirms Johnston’s (2003) contention that the virtual arena affords librarians the opportunity to provide “just-
in-time and just-enough information and instruction” (p. 33), rendering it even more appropriate for delivering instruction than the traditional face-to-face venue.

Of course, this is not necessarily what patrons desire from their online chat reference services. This study demonstrates that patron satisfaction is not necessarily related to the quality of the instruction that patrons receive, for there is no significant correlation between “excellence” and satisfaction, as demonstrated either through transcripts themselves or through four-question exit surveys. In fact, the only instructional techniques that are correlated to the satisfaction that patrons volunteered in surveys are “source revealed,” “library policies,” and “technical.” There is, however, a common thread: All three of these codes correspond with a patron’s desire to fulfill an immediate information need. When NCknows librarians reveal sources, they often provide a URL that patrons may click on and thereby access immediately. The overwhelming majority of instances of instruction related to “library policies” provide patrons with information related to utilizing NC LIVE or site-specific subscription databases. Likewise, many of the 32 passages defined by “technical” instruction inform patrons of ways that they may track down full-text articles in a database, manipulate hardware that is not working properly or access the password necessary for logging in to databases and other sources critical to resolving their information needs. All three scenarios share a degree of immediacy; patrons find themselves “stuck” and so contact NCknows librarians in order to retrieve an essential password or be pointed directly to a URL—quickly and effortlessly. As proponents of digital reference note, this medium provides “immediate assistance or gratification,” satisfying “customers ripe for speedy online assistance…who are coming to expect instantaneous feedback as given” (Ronan,
These assumptions clearly extend from the commercial world into the realm of information seeking and library services, as evidenced by the fact that NCknows users are more likely to demonstrate satisfaction when their expectations for convenience and instant gratification are realized.

It is clear, however, that patrons desire more than efficiency and easy access from their online reference service. Patrons who tell their librarians that they are satisfied during their chat reference transactions yet do not actually receive the information they request in their initial queries are more likely to report that they are “somewhat satisfied” with the quality of their reference transactions in their exit surveys. In fact, there is no correlation between patrons’ “survey satisfaction” and instances in which patrons explicitly demonstrate satisfaction through their transactions yet do not receive the information they requested (correlation with “survey satisfaction” is, however, evident when patrons apprise librarians of their satisfaction and have their information needs met). Additionally, these particular transactions bear a correlation with only four instructional techniques, whereas transactions in which patrons tell their librarians that they are satisfied in some capacity and receive the information that they request have a statistically significant relationship with nine instructional techniques. It is clear from this analysis, therefore, that more varied and thorough instruction tends to be delivered in transactions in which patrons are satisfied and receive the information that they request than when they do not. This echoes Ward’s (2004) claim that the successful, or “complete,” (p. 49) online reference transaction comprises not only an answer but also at least two instructional techniques.
Of course, it is simply not always possible to provide patrons with the information that they request. What else may a librarian do in order to help a patron feel that her NCknows transaction has been worthwhile? According to this study, patrons tend to tell librarians that they are satisfied—despite the fact that they do not receive desired information—when they are referred to another professional or when they receive instruction related to evaluating a source or to a potential search method or search tool, such as a database. It is interesting, however, that the 37 patrons in this analysis who were referred to another professional or institution tend to indicate their satisfaction to their librarians but not necessarily in their exit surveys. This suggests that, while patrons are tentatively satisfied to have been referred, they do not consider their chat transactions a complete success—once again, they want answers, and they want them now.

Regardless of the fact that patrons tend to be most satisfied not with transactions that boast stellar instances of instruction but, rather, transactions in which their requests are fulfilled, users do demonstrate that they wish to be instructed on how to access and use information: This is evidenced by the fact that patrons make a total of 27 explicit requests for instruction throughout this sample. Thirteen of these 27 requests for instruction (48.15%) are coupled with an incomplete “instance of instruction” (Johnston, 2003, p. 32) or a librarian’s missed opportunity to instruct on the topic about which the patron asks. Because there is a correlation between patrons’ requests for information and circumstances in which librarians do not provide complete instruction or miss entirely the opportunity to instruct, it would behoove librarians to consider patrons’ direct requests for instruction as carefully as they do any other question a patron asks of them. It is interesting that transactions deemed “excellent” in terms of teaching information literacy
skills also tend to include patrons’ requests for instruction. This suggests that the most beneficial and complete instruction may result from patrons’ specific questions about accessing information. Therefore, virtual reference professionals might enhance their service by carefully considering their communication styles, as well as models of effective communication in the digital arena, and by working to create an open environment in which patrons feel comfortable to ask follow-up questions. By doing so, they will be able to take advantage more fully of the “teaching moment that these encounters provide” (Ward, 2004, p. 53).

There is also significant correlation between patrons’ requests for instruction and librarians’ instruction related to particular information literacy skills: search methods, search tools and the evaluation of sources. NCknows librarians might consider bolstering their instruction on, or simply be aware that patrons tend to ask questions related to, these competencies. Similarly, there is a correlation between the 33 transcripts that contain incomplete or unclear instances of instruction and librarians’ attempts to train patrons on technical aspects of information negotiation and on retrieving and evaluating sources. Of these, instances of unclear or incomplete instruction co-occur most frequently with training related to retrieving sources, indicating that NCknows librarians could stand to strengthen their methods for teaching patrons how to retrieve sources from the Internet, from databases, through ILL or from libraries themselves. For instance, patrons might benefit from more step-by-step instruction on these processes or from URLs or online tutorials outlining library or online retrieval systems. Individual libraries might consider developing online resources to assist NCknows librarians with this aspect of locating information.
Finally, even though the vast majority of transactions analyzed in this study do include instruction of some sort, it is worthwhile to determine the aspects of information literacy that librarians featured in this analysis tend to overlook. Much as Ellis (2004) found in her content analysis of 138 chat reference transcripts, there is virtually no instruction provided on “using information effectively to accomplish a specific purpose” (ACRL, 2004, p. 13) and very little related to the “many economic, legal, and social issues surrounding the use of information and ways to access and use information ethically and legally” (ACRL, 2004, p. 14). Once again, this reveals that NCknows instruction is related most directly to patrons’ accessing desired information expeditiously and at their points of need. What good does it do for an individual to have information, though, if he does not also understand how to analyze and “use it in order to make informed decisions” (Stein, 2000, p. 136)?

Therefore, even though this study reveals that a patron undoubtedly seeks outstanding customer service from a competent librarian who provides him with the answer to his initial question, rather than simply effective teaching that leads to greater understanding of principles of information literacy, it is apparent that particular instructional techniques do have greater potential for resulting in patron satisfaction than others. Additionally, this study suggests that patrons often desire more than straightforward answers to their questions, despite the fact that the chat reference interface makes it very easy for librarians to give them just that (Johnston, 2003; Ronan, 2003). Patrons are likely to request instruction or clarification when librarians do not first offer it or when they inadequately describe a means for locating, evaluating or using information. It is obvious, therefore, that librarians must establish an environment in
which patrons are comfortable requesting such assistance and that they be trained on providing instruction in the digital arena on all aspects of information literacy—even those seldom or never mentioned in the transactions analyzed in this study and others like it (Ellis, 2004).

**Strengths and limitations of study**

Because this study assesses the chat reference behavior of librarians at eight of the 24 institutions that participate in NCknows in North Carolina, as well as numerous libraries that participate in the QuestionPoint collaborative across the United States and Canada, it is reasonable to generalize these findings to other virtual reference services. Furthermore, this study considers the work of librarians at academic, public and special libraries, contributing to its applicability to patrons and librarians in a range of settings. The 160 randomly selected transactions that comprise the analysis took place over the course of eighteen months, capturing the work of dozens of librarians at various points in the calendar year and at varying degrees of experience in conducting virtual reference work. Therefore, the reference behavior evaluated in this study is indicative not only of that provided by librarians who participate in NCknows, but also of the service provided by librarians in the hundreds of institutions that subscribe to OCLC’s QuestionPoint service.

This study was limited by the fact that it considers only transcripts attached to voluntarily completed exit surveys. There is undeniably a wealth of transactions that contain both evidence of patron satisfaction (or dissatisfaction) and instances of instruction worth analyzing in terms of quality and scope, but because this analysis focused on patron satisfaction, any transcript not accompanied by a voluntarily completed
survey was excluded. The means for determining levels of patron satisfaction was also somewhat limited: Patrons answered only four short, closed-ended questions, and less than half (41.61%) of patrons opted to provide additional comments in the open-ended portion of the survey. Perhaps the greatest limitation in terms of patron satisfaction for this study, however, is that so few patrons expressed dissatisfaction with their NCknows experience: Only two patrons apprised librarians of their dissatisfaction during the reference transaction, and only twelve patrons (8.05% of the usable sample) claimed to be dissatisfied in their exit surveys. Because so few were discontent, it was difficult to evaluate the type of service or aspect of instruction that tends to lead most frequently to patrons’ dissatisfaction with their NCknows experiences.

Similarly, because the definition of instruction used for this study was so broad, over 97% of reference transactions were found to include instruction in some capacity. This also made it difficult to draw definitive conclusions on the impact of librarians’ inclusion of instructional techniques on patrons’ chat reference experiences. Instead, it became necessary to analyze the relationship between patron satisfaction and specific types of instruction and, moreover, the quality or comprehensiveness of that instruction.

**Future research**

This study brings to bear a number of other questions worth considering. It would be useful, for instance, to consider a dataset exclusively in terms of ACRL’s standards four and five, for they were referred to so few times in this sample of chat reference transactions. Why might these aspects of information literacy be underrepresented in virtual reference work (Ellis, 2004)? Are they also missing from the instruction that librarians do in face-to-face settings? Additionally, it is necessary to consider patrons’
questions in light of this “missing” instruction: Are users simply not asking reference questions for which instruction on these topics is appropriate? Or are there challenges inherent to the digital reference setting that make offering instruction related to using information effectively and accessing information legally and ethically particularly difficult? If so, what might be done to eliminate these barriers?

Additionally, the notion of patron satisfaction is undoubtedly worth further consideration. Because satisfaction is so multi-faceted and, therefore, difficult to assess in a four-question survey, future studies might use techniques such as those employed by Pomerantz and Luo (2006), who conducted follow-up interviews with patrons in order to holistically evaluate users’ perceptions of the chat reference service that they receive. It would be useful to interview NCknows patrons regarding the quality or type of instruction that they receive in an effort to determine how effective librarians are in teaching their patrons and, further, patrons’ perceptions of the need for this instruction. The exit survey might also be altered to include a question directly related to the quality or inclusion of instruction or to patrons’ expectations—do they anticipate learning information literacy skills in addition to the answers to their explicit questions when they utilize chat reference services?

This analysis also raises questions regarding librarians’ training in providing instruction to NCknows patrons. While all NCknows librarians receive training directly related to using the OCLC QuestionPoint software and negotiating patrons’ information needs in the virtual environment (Crisp, 2004), how much attention is paid to the need for librarians to teach users to use, locate and evaluate information? How comfortable do librarians feel with the tenets of educational theory, and how aware are they of techniques
that are likely to lead to their success as educators? Studying the most effective instances of instruction, as determined by patrons through follow-up interviews or specific survey questions, and producing a set of sample chat reference scenarios that utilize particularly effective (or ineffective) instructional techniques might help administrators establish guidelines or best practices to which librarians might adhere when working in the online environment. Conducting a follow-up study after librarians have been provided with additional training on exemplary teaching techniques would then help administrators determine if such mechanisms are effective in enhancing instruction in the digital arena.

It is also useful to analyze the time that librarians invest in delivering these model instances of instruction. How long should a chat reference librarian spend on a single transaction, and is it realistic to expect her to spend the time necessary to impart information literacy skills, given other demands on her time and attention? Are chat reference collaboratives such as QuestionPoint designed to handle this type of extended service? Are there particular methods (e.g. online tutorials, pre-scripted explanations) that are not so time intensive, yet just as effective in enriching patrons’ skills sets?

Of course, these myriad questions and concerns are not unique to the virtual environment. Because chat reference transactions may be logged from start to finish and stored indefinitely, thereby rendering unobtrusive studies easier in the virtual arena than they are in traditional reference, it is useful to consider ways that digital reference research may be applied to librarians’ work in the face-to-face setting.

**Conclusion**

The impetus for this study stems from the facts that easy-access, real-time online services are rapidly growing in popularity for individuals both accessing and delivering
information and that librarians have long acknowledged their responsibility to educate their users, as addressed in RUSA’s Guidelines for Behavioral Performance of Reference and Information Professionals (2004) and in ACRL’s Information Literacy Competency Standards for Higher Education (2004). This analysis attempts to determine, one, the degree of success librarians achieve in instructing users in the virtual reference arena and, further, how interested patrons are in receiving this instruction.

While the vast majority of transactions analyzed do include some form of instruction, there is certainly room for more, particularly in helping patrons build their information literacy competencies related to using information and understanding the legal and ethical implications of doing so. In order to be effective, librarians must also attend to users’ inherent desire to become self-sufficient, which patrons frequently demonstrate in their interchanges. Further, information professionals for whom instructing users in the confines of the chat reference interface may not come naturally or particularly easily, specialized training and attention to instructing patrons thoroughly on all aspects of acquiring and using information may be necessary.

It is no shock that patrons’ primary interest is not with being instructed on how to use information but, rather, in resolving their immediate information needs, quickly and effortlessly. It cannot be denied, however, that these seemingly competing facets of the digital reference transaction are inextricably linked. If librarians invest the time and effort necessary to teach patrons how to duplicate an advanced search technique or access a specialized resource, patrons’ goals of efficiently accessing information will undoubtedly be met, particularly in their future negotiations. And, while users unmistakably enjoy the instant gratification that has long been a hallmark of chat
reference services (Johnston, 2003; Ronan, 2003), this analysis reveals that it is indeed possible to arm patrons with information literacy skills as well as satisfying resolutions to their queries—over twelve percent of the usable transactions in this study do so exceptionally well. In a time when the efficacy of virtual reference is being scrutinized by administrators and funding agents, it is critical not only that users’ satisfaction be evaluated and maintained but also that librarians capitalize on both their unique skills sets and the vast opportunities that digital reference services afford: They may do this by wholeheartedly accepting the role they play in helping to build communities of responsible citizens who understand how to make sense of information that is increasingly available, readily accessible—and potentially overwhelming.
Libraries whose staffs provide NCknows chat reference services are as follows:
Appalachian State University
Brevard College
Central Carolina Community College
Central Piedmont Community College
Cumberland County Public Library & Information Center
Duke University Library
Durham Technical Community College Library
Forsyth County Public Library
Greensboro Public Library
High Point Public Library
New Hanover County Public Library
North Carolina Agricultural and Technical State University
North Carolina Wesleyan College
Pitt Community College Learning Resources Center
Polk County Public Library
Public Library of Charlotte & Mecklenburg County
State Library of North Carolina
University of North Carolina - Chapel Hill
University of North Carolina - Greensboro
University of North Carolina - Wilmington
Wake County Public Libraries
Wake Forest University School of Medicine Library
Wake Technical Community College Library

Libraries whose websites link to NCknows reference service are as follows (librarians at these libraries do not provide virtual reference service through NCknows):
Alamance Libraries
Appalachian Regional Library
Asheville-Buncombe Library System
Asheville-Buncombe Technical Community College
Carrboro Cybrary
Carteret Community College
Caldwell County Public Library
Cape Fear Community College Learning Resource Center
Central North Carolina Regional Library
Chatham Libraries
Chowan University
Cleveland Community College
Davidson County Community College
Davidson County Public Library
Davie County Public Library
Durham County Public Library
East Carolina University
Reference and User Service Association (RUSA) Guidelines for Behavioral Performance of Reference and Information Professionals that specifically address instructional techniques that information professionals may use in order to increase patrons’ information literacy are as follows:

- Explains the search strategy and sequence to the patrons, as well as the sources to be used
- Explains how to use sources when appropriate
- Works with the patrons to narrow or broaden the topic when too little or too much information is identified
- Offers pointers, detailed search paths (including complete URLs), and names of resources used to find the answer, so that patrons can learn to answer similar questions on their own
- Uses appropriate technology (such as co-browsing, scanning, faxing, etc.) to help guide patrons through library resources, when possible

4 Association of College and Research Libraries (ACRL) Information Literacy Competency Standards are as follows:
- The information literate student determines the nature and extent of the information needed.
- The information literate student accesses needed information effectively and efficiently.
- The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.
- The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.
- The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally

5 All percentages are rounded to the nearest one-hundredth of a percent.
APPENDIX A: CODEBOOK, PRIOR TO CODING

Information Literacy Codes
For techniques librarians employ so that patrons may achieve information literacy, as defined by the Association of College and Research Libraries’ (ACRL) Information Literacy Competency Standards

I. “The information literate student determines the nature and extent of the information needed” (ACRL, 2004, p. 8)
   ▪ INFO NEED
     Discussion of ways that patron may
     o “Pose a question to be answered” (Stein, 2000, p. 62)
     o Identify key concepts and terms that describe the info need (ACRL, p. 8)
     o “Narrow or broaden the topic when too little or too much information is identified” (RUSA, 2004)
   ▪ INFO PRODUCTION
     Instruction on
     o Ways in which information is produced, organized and disseminated (ACRL, p. 8)
   ▪ INFO TYPE
     Instruction on
     o Differences between primary and secondary sources (ACRL, p. 8)
     o Differences between scholarly and popular sources (ACRL, p. 8)
     o Various formats and genres of information (e.g. historical sources, data, quantitative or qualitative research, narrative, opinion) (ACRL, p. 8)
   ▪ PRIOR INFO
     Determination of
     o What patron already knows about topic or query
     o Sources patron has consulted to resolve query, if applicable

II. “The information literate student accesses needed information effectively and efficiently” (ACRL, p. 9)
   ▪ SEARCH METHOD
     Discussion of ways that patron may
     o Determine appropriate investigative method (ACRL, p. 9)
     o “Use multiple lines of inquiry to collect information” (Stein, p. 62)
     o Gain understanding of “search strategy and sequence, as well as the sources to be used” (RUSA)
     o “Construct search strategy using appropriate commands for the information retrieval system selected (e.g. Boolean operators, truncation, proximity for search engines; internal organizers such as indexes for books)” (ACRL, p. 10)
     o “Identify and use strategies appropriate to goals, task, context and resources available for learning” (Stein, p. 58)
     o Use search terms (e.g. keywords, synonyms) based on controlled vocabulary unique to discipline (ACRL, p. 9)
     o “Refine or repeat search strategy,” as necessary (ACRL, p. 10)
   ▪ TOOLS
Discussion of ways that patron may
  o Use computers and other electronic tools to acquire, process and manage information (Stein, p. 64)
  o Determine which tools are most useful for the purpose and context at hand (Stein, p. 140)

▪ RETRIEVAL
Discussion of ways that patron may
  o Access sources using libraries’ online catalogs and databases
  o Utilize library services (e.g. off-site storage, ILL) to retrieve sources (ACRL, p. 10)

▪ SOURCE
Demonstration of ways that patron may
  o Use print and electronic sources to locate information (RUSA)
  o “Identify potential sources of information” (Eisenberg, p. 10)
  o “Extract, record and manage information and its sources” (ACRL, p. 10)

▪ RESULTS INTERPRETATION
Demonstration of ways that patron may
  o Interpret results of a database, Internet or OPAC search

▪ RESULTS EFFICACY
Discussion of ways that patron may
  o Assess the “quantity, quality, and relevance of the search results to determine whether alternative information retrieval systems or investigative methods should be utilized” (ACRL, p. 10)
  o Revise the search strategy and repeat the search (ACRL, p. 10)

▪ REFERAL
Discussion of other sources (e.g. subject experts, agencies) patrons may access to resolve query

III. “The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system” (ACRL, p. 11)

▪ EVALUATION
Discussion of ways that patron may
  o “Examine and compare information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness and point of view or bias” (ACRL, p. 11)
  o “Find, interpret, analyze and use diverse sources of information, including personal experience” (Stein, p. 136)
  o “Analyze the accuracy, bias or usefulness of the information” (Stein, p. 42)
  o “Establish criteria for the quality and appropriateness of the information” (Stein, p. 136)
  o “Assess the value of the information” (Stein, p. 136)

▪ SATISFACTION
  o Determine whether information satisfies the research question or if additional information is needed (ACRL, p. 12)
Determine if “initial query should be revised” (ACRL, p. 12)

IV. “The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose” (ACRL, p. 13)

- **SYNTHESIS**
  Discussion of ways that patron may
  - Organize information from multiple sources (Stein, p. 37)
  - Select information that provides evidence for the topic (ACRL, p. 12)
  - “Integrate new and prior information, including quotations and paraphrasings, in a manner that supports the purposes of the product or performance” (ACRL, p. 13); integrate new information “with prior knowledge” (Stein, p. 42)

- **INFO USE**
  Discussion of ways that patron may
  - “Find, interpret, analyze and use diverse sources of information, including personal experience” (Stein, p. 136)
  - “Manipulate information by combining it with other resources, enhancing it, or otherwise increasing the value of information for particular situations” (Eisenberg, p. 9)
  - “Use the information to make informed decisions” (Stein, p. 136)
  - Use Internet, computers and other electronic tools to acquire, process and manage information (Stein, p. 64)
  - Use a “range of information technology applications in creating the product or performance” (ACRL, p. 13)

V. “The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally” (ACRL, p. 14)

- **CITING SOURCES**
  Instruction on the
  - “Appropriate documentation style” for citing sources (ACRL, p. 14)
  - Importance of citing sources properly and consistently (ACRL, p. 14)

- **ETHICS**
  Instruction on the
  - Differences between fee-based and free information and issues related with each (ACRL, p. 14)
  - Issues related to plagiarism, copyright, fair use and intellectual freedom (ACRL, p. 14)
  - Issues related to “passwords and other forms of ID for access to information resources” (ACRL, p. 14)

- **COPYRIGHT**
  Instruction on the
  - Definitions and purpose of copyright (ACRL, p. 14)

**General Codes**
For techniques librarians employ to inform patrons of general library or NCknows policies or to teach patrons how to understand or use various technologies
VI. Codes for using the library

- LIBRARY CLASSIFICATION
  Provide patrons with information about
  - Libraries’ classification schemes and practices (ACRL, p. 10)
  - Interpreting classification information in the online catalog

- LIBRARY POLICIES
  Provide patrons with information about libraries’ general policies (e.g. hours, location, check-out policies)

- LIBRARY SERVICES
  Provide patrons with information about other services library provides (e.g. programming, ILL, purchase suggestions)

VII. Code for using NCknows

- NCKNOWS
  Provide patrons with information that helps them understand purpose and policies of NCknows chat reference collaborative

VIII. Codes for using technology

- TECHNICAL
  Instruct patrons on general use of
  - Internet
  - Email
  - URLs
  - Saving or printing information
  - Library card (user ID/password)
  - Internet applications or plug-ins (e.g. Adobe Acrobat)
  - Computer hardware (e.g. printer, scanner)

- VR
  Provide patrons with information that helps them
  - Understand general guidelines for and purpose Virtual Reference (VR) service
  - Understand specific VR actions (e.g. pushing pages, co-browsing, sending links, being transferred to another service provider)

Quality of Instruction Codes

IX. Code for documenting incomplete instruction

- INCOMPLETE
  - For situations when librarians attempt to provide patrons with instruction but do so in an unclear manner that does not result in patrons’ understanding of search strategy, information retrieval technique, etc.

X. Codes for documenting lack of instruction

- NONE
  - For situations when librarians do not offer instruction because patron’s question does not warrant more than a straight-forward or factual response
- MISSED
  - For situations when no instructional technique is used, yet patron could have benefited from instruction; missed opportunities for teaching patrons how to locate, evaluate or use information

Patron Satisfaction Codes
XI. Codes for patron satisfaction/dissatisfaction in transcript or comments section
- TRANSCRIPT SATISFACTION-INFO RECEIVED
  - For situations when patron demonstrates satisfaction with the transaction and with the information received, as revealed in the transcript itself or in the free-response comments that follow (e.g. “thank you, that’s exactly what I needed”; “you’ve been so helpful”)
- TRANSCRIPT SATISFACTION-INFO NOT RECEIVED
  - For situations when patron demonstrates satisfaction with the transaction, as revealed in the transcript itself or in the free-response comments that follow (e.g. “thank you, that’s exactly what I needed”; “you've been so helpful”) but it is clear that information has not been provided
- TRANSCRIPT DISSATISFACTION
  - For situations when patron demonstrates dissatisfaction with the transaction, as revealed either in the transcript itself or in the comments that follow

XII. Codes for patron’s response in survey
- SURVEY SATISFACTION
  - For situations when patron responds with “positive/yes” or “neutral/NA” or “satisfied” to question one; “excellent” or “good” to question two; “very likely” or “likely” to question three; “very easy” or “easy” to question four
- SURVEY DISSATISFACTION
  - For situations when patron responds with “negative/no” or “dissatisfied” to question one; “poor” to question two; “never” to question three; “difficult” or “very difficult” to question four
- SURVEY SOMEWHAT SATISFIED
  - For situations when patron responds with “somewhat satisfied” to question one or “fair” to question two
APPENDIX B: CODEBOOK, WITH MODIFICATIONS

Information Literacy Codes
For techniques librarians employ so that patrons may achieve information literacy, as defined by the Association of College and Research Libraries’ (ACRL) Information Literacy Competency Standards

I. Codes for instruction in how to determine the nature and extent of the information needed

- **INFO NEED**
  Discussion of ways that patron may
  - Pose a question to be answered
  - Identify key concepts and terms that describe the info need
  - Narrow or broaden the topic when too little or too much information is identified

- **INFO TYPE**
  Instruction on
  - Differences between primary and secondary sources
  - Differences between scholarly and popular sources
  - Various formats and genres of information (e.g. historical sources, data, quantitative or qualitative research, narrative, opinion)

- **INFO PRODUCTION**
  Instruction on
  - Ways in which information is produced, organized and disseminated

- **PRIOR INFO**
  Determination of
  - What patron already knows about topic or query (reference interview)
  - Sources patron has consulted to resolve query, if applicable

II. Codes for instruction in how to access needed information effectively and efficiently

- **SEARCH METHOD**
  Discussion of ways that patron may
  - Determine appropriate investigative method
  - Use multiple lines of inquiry to collect information
  - Gain understanding of search strategy and sequence, as well as the sources to be used
  - Construct search strategy using appropriate commands for the information retrieval system selected (e.g. Boolean operators, truncation, proximity for search engines; internal organizers such as indexes for books)
  - Identify and use strategies appropriate to goals, task, context and resources available for learning
  - Use search terms (e.g. keywords, synonyms) based on controlled vocabulary unique to discipline
  - Refine or repeat search strategy, as necessary

- **TOOLS**
  Discussion of ways that patron may
  - Use computers and other electronic tools (including databases) to acquire, process and manage information
Determine which tools are most useful for the purpose and context at hand

**POTENTIAL SOURCES**
- Demonstration of ways that patron may
  - Use print and electronic sources to locate information
  - Identify potential sources of information
  - Extract, record and manage information and its sources

**SOURCE REVEALED**
- URL (but no other information) is provided for patron
- Name of website or source is provided for patron

**SOURCE INFO**
- Discussion of background information necessary for understanding how to use source effectively

**REFERAL**
- Discussion of other sources (e.g. subject experts, agencies) patrons may access to resolve query

**RETRIEVAL**
- Discussion of ways that patron may
  - Access sources using libraries’ online catalogs and databases
  - Utilize library services (e.g. off-site storage, ILL) to retrieve sources

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### III. Code for instruction in how to evaluate information and its sources critically and incorporate selected information into patrons’ knowledge bases and value systems

**EVALUATION**
- Discussion of ways that patron may
  - Examine and compare information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness and point of view or bias
  - Find, interpret, analyze and use diverse sources of information, including personal experience
  - Analyze the accuracy, bias or usefulness of the information
  - Interpret results of a database, Internet or OPAC search
  - Establish criteria for the quality and appropriateness of the information
  - Assess the quantity, quality, and relevance of the search results to determine whether alternative information retrieval systems or investigative methods should be utilized
  - Assess the value of the information
  - Determine whether information satisfies the research question or if additional information is needed
  - Determine if initial query should be revised
  - Revise the search strategy and repeat the search

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### IV. Code for instruction in how to use information effectively to accomplish a specific purpose

**INFO USE**
- Discussion of ways that patron may
- Manipulate information by combining it with other resources, enhancing it, or otherwise increasing the value of information for particular situations
- Use the information to make informed decisions
- Organize information from multiple sources
- Select information that provides evidence for the topic
- Integrate new and prior information, including quotations and paraphrasings, in a manner that supports the purposes of the product or performance; integrate new information with prior knowledge

V. Code for instruction of the many economic, legal, and social issues surrounding the use of information and ways to access and use information ethically and legally

- CITING SOURCES
  Instruction on the
  - Appropriate documentation style for citing sources
  - Importance of citing sources properly and consistently
  - Differences between fee-based and free information and issues related with each
  - Issues related to plagiarism, copyright, fair use and intellectual freedom
  - Issues related to passwords and other forms of ID for access to information resources

General Codes
For techniques librarians employ to inform patrons of general library or NCknows policies or to teach patrons how to understand or use various technologies

VI. Code for using the library

- LIBRARY POLICIES
  Provide patrons with information about libraries’ general policies (e.g. hours, location, check-out policies) services the library provides (e.g. programming, purchase suggestions)

VII. Code for using NCknows

- NCKNOWS
  Provide patrons with information that helps them understand
  - General guidelines, policies and purpose of NCknows Virtual Reference (VR) collaborative
  - Understand specific VR actions (e.g. pushing pages, co-browsing, sending links, being transferred to another service provider)

VIII. Code for using technology effectively

- TECHNICAL
  Instruction patrons on general use of
  - Internet
  - Email
  - URLs
  - Saving or printing information
  - Library card (user ID/password)
o NC LIVE password
o Online/full-text access
o Internet applications or plug-ins (e.g. Adobe Acrobat)
o Computer hardware (e.g. printer, scanner)

**Quality of Instruction Codes**

IX. Code for documenting incomplete instruction
- **UNCLEAR OR INCOMPLETE IOI**
  - For situations when librarians attempt to provide patrons with instruction but do so in an unclear manner that does not result in patrons’ understanding of search strategy, information retrieval technique, etc.

X. Codes for documenting lack of or request for instruction
- **NONE**
  - For situations when librarians do not offer instruction because patron’s question does not warrant more than a straight-forward or factual response
- **MISSED**
  - For situations when no instructional technique is used, yet patron could have benefited from instruction; missed opportunities for teaching patrons how to locate, evaluate or use information
- **REQUESTS FOR INSTRUCTION**
  - For situations when patron explicitly requests instruction on a topic or technique

XI. Code for documenting outstanding instances of instruction
- **EXCELLENT**
  - For situations when librarian effectively employs one or more instructional techniques from at least three of the five first categories in codebook (sections I-V)

**Patron Satisfaction Codes**

XII. Codes for patron satisfaction/dissatisfaction in transcript or comments section
- **TRANSCRIPT SATISFACTION-INFO RECEIVED**
  - For situations when patron demonstrates satisfaction with the transaction and with the information received, as revealed in the transcript itself or in the free-response comments that follow (e.g. “thank you, that’s exactly what I needed”; “you’ve been so helpful”)
- **TRANSCRIPT SATISFACTION-INFO NOT RECEIVED**
  - For situations when patron demonstrates satisfaction with the transaction, as revealed in the transcript itself or in the free-response comments that follow (e.g. “thank you, that’s exactly what I needed”; “you've been so helpful”) but it is clear that information has not been provided
- **TRANSCRIPT DISSATISFACTION**
  - For situations when patron demonstrates dissatisfaction with the transaction, as revealed either in the transcript itself or in the comments that follow
XIII. Codes for patron’s response in survey

- **SURVEY SATISFACTION**
  - For situations when patron responds with “positive/yes” or “neutral/NA” or “satisfied” to question one; “excellent” or “good” to question two; “very likely” or “likely” to question three; “very easy” or “easy” to question four

- **SURVEY DISSATISFACTION**
  - For situations when patron responds with “negative/no” or “dissatisfied” to question one; “poor” to question two; “never” to question three; “difficult” or “very difficult” to question four

- **SURVEY SOMEWHAT SATISFIED**
  - For situations when patron responds with “somewhat satisfied” to question one or “fair” to question two
APPENDIX C: OCLC QUESTIONPOINT EXIT SURVEYS

Survey One
Please select the most appropriate answer to the following questions or statements. The information that you provide will help us to make the system better for all of our users.

1. How satisfied were you with the answer that you received?
   Satisfied
   Somewhat Satisfied
   Dissatisfied

2. The quality of the library staff service in answering this request was:
   Excellent
   Good
   Average
   Poor

3. Will you use this service again?
   Very likely
   Likely
   Maybe
   Never

4. The ease of using this online reference service is:
   Very easy
   Easy
   Difficult
   Very difficult

Additional Comments:

Survey Two
Please select the most appropriate answer to the following questions or statements. The information that you provide will help us to make the system better for all of our users.

1. Did you receive sufficient information in response to your request?
   Negative or No
   Neutral or N/A
   Positive or Yes

2. The quality of the library staff service in answering this request was:
   Excellent
   Good
   Average
   Poor
3. Will you use this service again?
   Very likely
   Likely
   Maybe
   Never

4. The ease of using this online reference service is:
   Very easy
   Easy
   Difficult
   Very difficult

   Additional Comments:

   *Question one varies among sampled transactions.
APPENDIX D: QUESTIONPOINT PATRON TERMS OF SERVICE

1. Acceptance of Terms
Thank you for using this library service, which utilizes the QuestionPoint 24/7 Reference Service developed by the Library of Congress, the Metropolitan Cooperative Library Service, and the OCLC Online Computer Library Center, Inc., and maintained by OCLC and the Library of Congress. This document states the terms on which QuestionPoint provides you with various services through your library. Please read these terms carefully before acknowledging your acceptance and using this web form. We reserve the right to update the Terms at any time. You can always review the most current version here or at www.QuestionPoint.org.

2. Definitions
   Partners – OCLC, Inc., partners with the Library of Congress in offering QuestionPoint 24/7 Reference
   Personal Information – The following elements can sometimes, if not always, uniquely identify a person. Thus, these elements are discarded by OCLC when the transaction is saved in Service History. E-mail address, portion before the @ sign. Name, address, and phone numbers
   Library card number or other identifying number

3. OCLC Privacy Statement
   This Privacy Statement sets out OCLC’s privacy policy and explains what OCLC does with the information collected by our subscribing libraries and stored on our servers.

   For its own purposes, the library using this underlying QuestionPoint 24/7 Reference service may ask you to provide your name, e-mail address, ZIP code, telephone number, library card number, and other information. While this data is not required for our service to function, the library may be better able to answer your question and deliver more relevant content if you volunteer complete and accurate information.

   Your e-mail address allows the library to answer your question via e-mail. If you chat with a librarian you have the option to remain anonymous. Questions and answers, as well as transcripts, are often maintained by the library so its librarians can get back to you if they find additional information about your question. Your full e-mail address is not used for any other purpose, though the domain (the portion after the @ sign) may be used for demographics analysis.

   Any personal information collected is disclosed only to the extent necessary to fulfill your request for information. For example, the library may need to refer your question to a librarian in its network, who will have access to your information in order to answer your question and communicate with you. OCLC does not provide personal information to any party except as required to do so by law.

   Your question, the library’s answer, and any demographic information collected may be used to analyze usage, evaluate service effectiveness and provide training material, and to facilitate library research. Fields specifically designed to collect personal information are deleted before the transaction is saved or transferred for these purposes.

   However, any information you provide in fields other than those, such as your question text, could be retained; therefore we encourage you to provide personal information ONLY in fields specifically designed for such information.

   You understand that while we do our best to protect your personal information, OCLC cannot ensure or warrant the absolute security of any information you transmit through this service. You agree that any information you provide on the web form and the text of your question are your sole responsibility and that you transmit information through this service at your own risk. Further, you understand how any personal information entered on the form may be used by the library or referral library and agree to that use.

   If a user indicates s/he is younger than 13 years of age, the information is deleted from our records in accordance with the Children's Online Privacy Protection Act (15 U.S. Code, 6501 et seq.).

4. Postscript to QuestionPoint Services
   You acknowledge and agree that OCLC and its partners may store all electronic transactions carried out between you and the library on this service and any information provided by you on this web form, as described in the Privacy Statement, for an indefinite period, with this exception: your name and all but the domain of your e-mail address will be deleted after 90 days. As such, OCLC may disclose the data in its possession only as described in the Privacy Statement and if required to do so by law.

   You hereby grant to OCLC and its partners the perpetual, nonexclusive, worldwide right to edit, compile, and make searchable by libraries and the public all completed question-and-answer pairs originally submitted by you via this form, provided all personal information is deleted from the text.

5. Patron Conduct
   You agree not to use this library service to:
   a. Post any content that infringes any patent, trademark, trade secret, copyright or other proprietary rights of any party.
   b. Interfere with or disrupt the service or servers or networks connected to the service;
   c. Post any material that contains software viruses or any other computer code, files, or programs designed to interrupt, destroy, or limit the functionality of any computer software or hardware or telecommunications equipment.

   OCLC and its partners reserve the right to deny access to users who do not comply with these rules. Appeals may be addressed to support@oclc.org.

6. Password and Security
   When you use this service for the first time, you will be assigned a password to access your question and answers on the web (you will also receive all communication by e-mail). You are responsible for maintaining the confidentiality of your password and account and for logging out of your account at the end
of each session. You agree to notify your library immediately of any unauthorized use of your password or account or any other breach of security. OCLC will not be liable for any loss or damage arising from your failure to comply with this section.

7. Indemnity
You agree to indemnify and hold OCLC and its partners harmless from any liability arising out of (a) anything you submit from this web form or that are submitted from your account, (b) your use of this service, (c) your connection to the service, (d) your violation of this Agreement, or (e) your violation of any rights of another party.

8. Termination
You agree that OCLC may terminate your password, account, or use of this service or discard any of your questions and completed transactions within the service, for any reason and without prior notice. Further, you agree that OCLC shall not be liable to you or any third party for any termination of your access to this service.

9. Disclaimer of Warranties
BY USING THE SERVICE YOU AGREE THAT:

a. Your use of the service is at your sole risk. The service is provided on an "as is" and "as available" basis. OCLC and the Library of Congress expressly disclaim all warranties of any kind, whether express or implied, including but not limited to the implied warranties of merchantability, fitness for a particular purpose, and non-infringement.

b. OCLC MAKES NO WARRANTY THAT (i) THE SERVICE WILL MEET YOUR REQUIREMENTS, (ii) THE SERVICE WILL BE UNINTERRUPTED, TIMELY, SECURE, OR ERROR-FREE, AND (iii) THE QUALITY OF ANY PRODUCTS, SERVICES, INFORMATION OR OTHER MATERIAL PURCHASED OR OBTAINED BY YOU THROUGH THE SERVICE WILL MEET YOUR EXPECTATIONS.

c. NO ADVICE OR INFORMATION, WHETHER ORAL OR WRITTEN, OBTAINED BY YOU FROM QUESTIONPOINT OR THROUGH OR FROM THE SERVICE SHALL CREATE ANY WARRANTY NOT EXPRESSLY STATED IN THE TERMS OF SERVICE OR PROVIDED FOR INFORMATIONAL PURPOSES ONLY, AND IS NOT CONFIRMED IN ANY WAY FOR ACCURACY. NO CONTENT ON THE QUESTIONPOINT SERVICE IS INTENDED TO CONSTITUTE PROFESSIONAL ADVICE, WHETHER MEDICAL, FINANCIAL, LEGAL OR OTHERWISE.

10. Limitation of Liability
YOU UNDERSTAND AND AGREE THAT OCLC IS NOT LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES, INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFITS, GOODWILL, USE, DATA OR OTHER INTANGIBLE LOSSES (EVEN IF OCLC HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES), RESULTING FROM: (i) THE USE OR THE INABILITY TO USE THE SERVICE; (ii) THE COST OF PROCUREMENT OF SUBSTITUTE GOODS AND SERVICES RESULTING FROM ANY GOODS, DATA, INFORMATION OR SERVICES PURCHASED OR OBTAINED FROM THE SERVICE; (iii) THE REMOVAL OR MODIFICATION OF ANY CONTENT SUBMITTED OR PROVIDED BY YOU; OR (iv) ANY OTHER MATTER RELATING TO THE SERVICE.
APPENDIX E: DATA USE AGREEMENT

June 12, 2007

As NCknows project administrator, I give Emily Daly permission to examine all NCknows transcripts that we have access to for the purpose of academic research. The privacy of the librarians’ identity and the patrons’ identities should be protected according to ALA’s privacy guidelines, OCLC/QP’s Terms of Service* and any local laws.

Sincerely,

Phil Blank
NCknows project administrator and librarian

Email: phil@philblank.net
Phone: 919-942-8995

*See Appendix D, QuestionPoint Patron Terms of Service.
APPENDIX F: SAMPLE TRANSCRIPTS CODED AS “EXCELLENT”

Excellent transcript: Sample one
Patron: How can I find Journal Articles about Jane Austen?
Librarian: Hi, I'm a reference librarian with the Question Point chat service. Our
librarians staff this 24-hour service when your librarians are unavailable. I am reading
your question right now to see how I can help you . . .
Librarian: I can help you with that
Librarian: is this for college, or high school?
Librarian: I don't want to send something too easy or too technical
Patron: it is for college
Librarian: ok great
Librarian: what college do you attend?
Librarian: I can help you with their resources
Patron: I attend Ab tech
Librarian: as that is what your professor will want you to use
Librarian: AB Tech?
Patron: yes
Librarian: I am sorry, I am a librarian in Texas
Librarian: what does AB Tech stand for?
Librarian: is it Asheville-Buncombe
Librarian: tech?
Patron: Asheville Buncombe Technical Community college
Patron: Yes
Librarian: awesome

Librarian: http://www.abtech.edu/LRC/nclive-databases-offcampus.asp

Librarian: here are some of your library databases that you have access to from off-campus

Librarian: can you see what I sent?

Patron: will i need a password for this?

Patron: yes

Librarian: yes

Librarian: you will need your library card barcode

Librarian: do you have it?

Patron: yes

Librarian: great

Patron: let me get it right fast

Librarian: the Gale Literature Resource Center will have a lot of journal articles

Librarian: what exactly are you studying about Austen?

Patron: well i have to do an annotated bibliography of two journal articals...i am reading pride and prejudice

Librarian: oh ok

Librarian: great

Librarian: so when you log in to the Literature Resource Center you can do a subject search on Pride and prejudice

Librarian: or a Keyword search on it

Patron: ok...cool
Librarian: there should be tons
Patron: i have my card...do u need some info from it
Librarian: you could also do an author search on Jane Austen
Librarian: I don't
Librarian: you can go ahead and log in if you want
Librarian: or try it on your own and come back if you need more help?
Patron: ok...thank u so much!!!
Librarian: you are welcome
Librarian: please come back if you need more help
Librarian: if you are not finding what you need
Librarian: thanks for logging in
Librarian: and have a good night!
Patron: i will. thank u again
Librarian: enjoy pride and prejudice
Librarian: it is really good!
Librarian: Librarian ended chat session.

Excellent transcript: Sample two
Patron: Do you have a book that talks about chewing tabacco.
Librarian: Hi, Welcome to online reference. I am one of the librarians in the nationwide cooperative staffing this service. I am reading your question.
Librarian: Let's check. One moment.
Librarian: Which branch of the college do you attend?
Librarian: And do you have to have a book? Would a magazine article do?
Patron: Central carolina community college at harnett county.

Patron: a magazine article will also help me.

Librarian: http://louise.nccommunitycolleges.edu/uhtbin/cgisirsi/HMyAvT3srJ/CC-HARNETT/138700360/123

Librarian: I put in tobacco and (smokeless or chewing) and this book came up.

Librarian: Let's see about an article.

Patron: where can i get the book.

Librarian: Let me check on where to get the book.


Librarian: Have you ever used the online databases? If you are in the library, you will not need a password or user id to get it. Off campus, you will.

Librarian: I will check on the book. Be right back.

Librarian: Holdings CCCC -- Harnett Copy Material Location HV 5733 .T62 2005 HCC

1 Circulating books Standard shelving location

Librarian: It is in your library at that location.

Librarian: Holdings CCCC -- Harnett Copy Material Location HV 5733 .T62 2005 HCC

1 Circulating books Standard shelving location

Patron: Also please check on a magazine or a newspaper.

Librarian: I see that there a good many resources under the heading NC LIVE on your homepage. Have you ever used those before? Please type in your email address, just in
case we are disconnected. You will get an email with the link to the resources.

Patron: ******@yahoo.com

Librarian:  http://findarticles.com/p/articles/mi_m0689/is_4_54/ai_n13783806

Librarian: Here is a good article from a medical magazine.

Librarian:  What do you think?

Librarian:  What interventions can help patients stop using chewing tobacco? Journal of
Family Practice, April, 2005 by Kenesha D. Smith, Mollie Ashe Scott, Elizabeth
Ketterman

Librarian:  That is the title of the article.

Librarian:  Nicotine - chewing on it - nicotine content in various brands of chewing
tobacco - Brief Article Science News, May 14, 1994 by Janet Raloff

Librarian:  Here is the link to the article directly above.

Patron:  where can I find it.

Librarian:  http://findarticles.com/p/articles/mi_m1200/is_n20_v145/ai_15265989

Librarian:  Where can you find the book? Do you mean which library or where in the
library?

Librarian:  If the articles did not appear on your screen, you can click on them in the
email that you will get at the end of the session. Then they will come up on your screen.

Patron:  is their one in harnet county (Central Carolina Community College).

Librarian:  Yes, and it can be checked out, since it is not in the reference area.

Patron:  can you put on hold for me.

Librarian:  HV 5733 .T62 2005 HCC 1 Circulating books

Librarian:  You will need to call or email your library. I am a librarian in another state.
Librarian: Do you need the number. It should be on the webpage where you found this service.

Patron: yes, please.

Librarian: I will get it, one moment.

Librarian: CCCC operates three full-service libraries. They are located on the Harnett, Chatham, and Lee branch campuses. The libraries are open during the following hours.

Sanford Mon-Thurs 7:30am - 9:00pm, Fri 7:30am - 3:30pm Lillington Mon-Thurs 7:30am - 8:00pm Fri 7:30am- 8:00pm Pittsboro Mon-Thurs 7:30am - 8:00pm Fri 7:30am- 3:30pm We close at 5:00pm during semester breaks.

Librarian: Sorry, pasted the wrong part.

Librarian: Phone Reference - Janice Pope 919 718-7245 Public Services/Circulation - B. J.Thompson 919 718-7375 General needs/questions - Linda Stone 919 718-7208 Hours

Librarian: Does that help?

Patron: yes.

Librarian: If you have never used the library's online databases, be sure to become acquainted with it. It looks as if the pin is the last four digits of your social.

Patron: Thanks very much.

Librarian: There are some great resources that will help in all your work

Librarian: Glad to help!

Librarian: Please call again.

Librarian: If there is nothing else, I will sign off.

Patron: okay. bye have a nice day.

Librarian: You too.
REFERENCES


