

NCknows Report
Transcript Peer Review

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Executive Summary

This report contains the analysis of the peer review of NCKnows transcripts. There are three evaluation questions that this transcript review was designed to answer:

1. What is the quality of reference service being provided to patrons by NCKnows?
2. How does the quality of reference service provided by 24/7 librarians compare to the quality of service provided by NCKnows librarians?
3. Can a librarian in a public library adequately answer questions from academic library users, and vice versa?

Transcripts from the launch of the NCKnows service on 16 February through 30 June 2004 made up the sampling pool. A total of 456 transcripts were sent to librarians to be evaluated, of which 429 (94.1%) were reviewed.

Overall, the evaluations were very positive, for all questions. This indicates that the reviewers rate the quality of reference service being provided by NCKnows highly.

Transcripts by NCKnows librarians were rated slightly but not significantly higher than transcripts by 24/7 staffers for most questions asked in the transcript review.

Transcripts by public librarians were rated significantly higher than responses from academic librarians, for many questions asked in the transcript review.

A number of recommendations are made for ways to improve the NCKnows service.

Introduction

This report contains the analysis of the peer review of NCKnows transcripts. NCKnows (www.ncknows.org) is a collaborative state-wide chat reference service, coordinated by the State Library of North Carolina's Library Development Section (statelibrary.dcr.state.nc.us). Libraries of all types are participating: academic, public, and government; in research universities and community colleges, urban and rural, large and small. NCKnows was launched in February 2004, and as of this writing NCKnows is in an 18-month pilot phase.

From the outset of the NCKnows project, the evaluation was designed to take three perspectives: evaluation from the perspective of (1) NCKnows patrons, (2) the individual libraries participating in NCKnows, and (3) the entire NCKnows collaborative effort. This transcript peer review allows evaluation from the points of view of the patrons and the entire NCKnows effort: critiquing transcripts enables analysis of the quality of reference service being provided to patrons, under the banner of NCKnows.

There are three evaluation questions that this transcript review was designed to answer:

1. What is the quality of reference service being provided to patrons by NCKnows?
2. How does the quality of reference service provided by 24/7 librarians compare to the quality of service provided by NCKnows librarians?
3. Can a librarian in a public library adequately answer questions from academic library users, and vice versa?

Evaluating the quality of answers to questions and interactions with patrons has a long tradition in reference services. But it is known to be a potentially difficult process, as it can be fraught with the possibility of personal affront when one's own answer is being evaluated. I believe that everyone understood the purpose of the transcript review, and that it was not in any way personal. But it's worth repeating anyway: the intent of the transcript review was not to criticize any individual librarian's chat sessions, but rather to identify positive and negative trends in the chat sessions across the entire service.

Methodology

Transcripts from the launch of the NCKnows service on 16 February through 30 June 2004 made up the sampling pool. All transcripts that were closed with the resolution code TEST were removed from the pool. The sampling pool included a total of 3,076 transcripts. Unfortunately resolution codes are not used consistently and some training sessions were not closed with the TEST resolution code. Because there was no way to automatically filter these transcripts out of the sampling pool, 7 test transcripts were included in the set of transcripts that were sent to librarians to be evaluated. The issue of resolution codes will be discussed further in the Recommendation section.

The pool of 3,076 transcripts were divided first into three pools: those in which the librarian was in one of the libraries participating in NCKnows (1,378 transcripts), and those in which the librarian was an employee of 24/7 (1,698 transcripts). Recall from the

June statistics report that NCKnows librarians handle approximately 45% of the sessions that come in through all of the NCKnows queues, and approximately 55% are handled by the 24/7 network, when counting all questions during all hours of the day. This division was made so that research question 2 could be answered.

The pool of transcripts handled by NCKnows librarians was then sub-divided into two groups: those in which the librarian was in an academic library (699 transcripts) or a public library (679 transcripts). This division was made so that research question 3 could be answered. There were thus three pools of transcripts: NCKnows academic (699 transcripts), NCKnows public (679 transcripts), and 24/7 (1,698 transcripts).

12 transcripts were randomly sampled per librarian from these three pools of transcripts, proportional to the size of each group. This sampling method led to most librarians reviewing 4 transcripts from each group.

No librarian reviewed transcripts in which he/she or any colleagues in the same library was the librarian.

12 transcripts were sampled per librarian, for all 19 original libraries participating in NCKnows (including the State Library). In their partner library application forms, each library specified 2 librarians who would participate in NCKnows, and packets of transcripts were sent to these 2 librarians. Thus 456 transcripts were sent to librarians to be evaluated:

$19 \text{ libraries} * (2 \text{ librarians} / \text{library}) * (12 \text{ transcripts} / \text{librarian}) = 456 \text{ transcripts}$

The 456 transcripts sampled for this review were anonymized by replacing every instance of the patron's username with "Patron" and every instance of the librarian's username with "Librarian." This was necessary to preserve the patrons' privacy, as well as to insure that the librarian reviewing the transcript would not know who the librarian was whose chat session that was. Anonymizing the transcripts, however, led to some confusion: some of you pointed out that in some transcripts the librarian called the patron "Patron." This is not really what happened in the actual transcript. In the actual transcript, the librarian called the patron by name or by username. But the anonymized versions of the transcripts may read strangely at times.

Every librarian reviewed a unique set of 12 transcripts; in other words, each of the 456 transcripts was reviewed by one and only one librarian. For the purposes of this evaluation, we considered coverage of the maximum possible number of transcripts to be the most important consideration, more important than having multiple librarians rate the same transcript. This approach was taken since a primary objective of the evaluation effort is to produce findings that may be used to improve or fine-tune the service, and the greater the number of transcripts that are reviewed, the greater the chances of discovering issues that need addressing by the service.

There is a tendency for respondents, when reporting on their satisfaction with a service, to be overly generous, especially when that service is provided by another human being with whom the respondent has had some personal contact. This is a frequent explanation for why reports of patron satisfaction with reference services is so high, even when patrons report that the answer provided by the service was not complete (see, for example: Durrance, 1989, p. 35; Richardson, 2002). This is probably also the case for this transcript evaluation: the reviewing librarians may have been more generous in their reviews, because they knew that they were evaluating their colleagues' transcripts, than they might have been if they had been evaluating transcripts from an unknown service. This is perfectly natural and to be expected. Indeed, this was anticipated, and in the instructions provided to the librarians was a statement to this effect, and a request to "please be honest" so that accurate data could be collected that could be used to establish a realistic baseline for the quality of the NCKnows service. This is, however, easier said than done. Therefore keep in mind that the results discussed below may be artificially high.

Results Overall

Of the 456 transcripts that we sent out for review, 429 (94.1%) were reviewed. This is an excellent response rate. It was not 100% because 2 librarians left their jobs during the transcript review and did not complete the review, and a handful of others had technical difficulties while attempting to submit their reviews to SurveyMonkey.

Not every question in the review was answered for every transcript, as can be seen in the Ns for the tables, below. The SurveyMonkey system allows some "logic" to be built into surveys, and depending on the answer to previous questions, subsequent questions may be skipped. For example, if the reviewer answered the question in the review "The question is answered completely and correctly" with the option "No answer is provided," then the follow-up question "The user is given one or more specific, authoritative source(s) to support the librarian's answer" was skipped. Some questions may also have been skipped because of technical problems or because the librarian thought that the question was not appropriate for the specific transcript he or she was reviewing.

One-Question Analyses

The results from all but one of the transcript review questions are presented here. There were 13 questions in the transcript review for which multiple-choice answers were provided (though these questions all had a Comments field, the results from which will be addressed below). The one question from which the results are not presented here is the one question that was not multiple-choice: What could the librarian have done differently to have improved the chat session? The results from this question will be addressed below, with the Comments from the other questions.

Overall, the evaluations were very positive, for all questions.

Table 1: The question is answered completely and correctly (N = 428)

Response	% of responses
Complete & correct	52.3
Incomplete but correct	26.6
Incomplete and incorrect	4.0
Incorrect	0.9
No answer provided	16.1

Nearly 79% of all responses were that the question was answered correctly, if not completely. Only 5% of responses were that the question was answered incorrectly. For the transcripts in which no answer was provided, the comments indicated the following reasons why this was so:

- The librarian promised to follow-up by email,
- The patron was referred to another library,
- The question was inappropriate for the service,
- The patron disconnected before the conclusion of the session, and
- There were technical problems that prevented the successful conclusion of the session or no question was submitted at all.

Table 2: The user is given one or more specific, authoritative source(s) to support the librarian's answer (N = 226)

Response	% of responses
Yes	89.8
No	10.2

For the transcripts in which an authoritative source was not given, the comments indicated the following reasons why this was so:

- The librarian did not cite or provide the source(s) for the information that he or she gave to the patron, and
- The librarian did not give sources to the patron because the session ended before coming to a successful conclusion, or the question did not call for them.

Table 3: The librarian promises to follow up with the patron by email, telephone, or some media other than chat (N = 203)

Response	% of responses
Yes	31.0
No	69.0

For the transcripts in which a follow-up was not promised, the comments indicated the following reasons why this was so:

- The question was answered completely and correctly and so no follow-up was necessary,
- There were technical problems or the patron disconnected, thus preventing the successful conclusion of the session, and

- It would not have been possible for the librarian to follow up even if they had wanted to because the patron did not provide an email address.

Table 4: The user is referred to an appropriate resource or other service (N = 428)

Response	% of responses
Yes	52.9
No	47.1

For the transcripts in which the user was not referred appropriately, the comments indicated the following reasons why this was so:

- There were technical problems or the patron disconnected, thus preventing the successful conclusion of the session, and
- The reviewing librarian mentioned specific resources that the librarian should have used in the chat session.

Table 5: The librarian told the user what s/he was doing as the transaction progressed (N = 428)

Response	% of responses
Yes	70.6
No	29.4

For the transcripts in which the librarian did not communicate with the patron as the transaction progressed, the comments indicated the following reasons why this was so:

- There were technical problems or the patron disconnected, thus preventing the successful conclusion of the session, and
- The librarian sent resources to the patron without any prior explanation, such as where those resources came from or why those specific resources were provided.

Table 6: The librarian used appropriate information resources to answer the question (N = 428)

Response	% of responses
Yes: I don't know any resources that the librarian could have used that he or she didn't.	47.0
Mostly: The librarian used many or most of the resources I would have used to answer this question.	26.4
Some: The librarian used some or a few of the resources I would have used to answer this question.	12.9
No: The librarian didn't use any of the resources I would have used to answer this question.	13.8

For the transcripts in which the librarian used some or no appropriate information resources, the comments indicated the following reasons why this was so:

- Technical problems or the patron disconnected, and

- The librarian did not indicate what information resources he or she was using, or perhaps relied on personal knowledge.

Table 7: Open-ended or neutral questions are asked at the outset of the transaction to clarify the information need (N = 428)

Response	% of responses
All questions asked at the outset of the transaction are open-ended or neutral.	27.3
Some questions asked at the outset of the transaction are open-ended or neutral.	18.0
All questions asked at the outset of the transaction are closed-ended.	11.0
No questions are asked at the outset of the transaction.	25.7
Open-ended and neutral questions are not needed in the transaction.	18.0

For the transcripts in which no questions or only closed-ended questions are asked at the outset of the transaction, the comments indicated the following reasons why this was so:

- Technical problems or the patron disconnected,
- The librarian did not ask any questions at all during the transaction,
- The librarian did not ask any questions to clarify the patron’s information need during the transaction, and
- The librarian asked closed-ended questions, but those questions were appropriate to clarify the patron’s information need.

Table 8: The librarian confirms what other resources the user has already checked (N = 428)

Response	% of responses
Yes	16.4
No	48.4
It is not necessary to confirm what other resources the user has already checked.	35.3

For the transcripts in which the librarian did not confirm what resources the user has already checked, the comments indicated the following reasons why this was so:

- Technical problems or the patron disconnected,
- The transcript is a follow-up to a previous session that may have been disconnected due to technical problems,
- The patron requests a known item,
- The librarian assumed that the patron had not checked other resources, and
- The librarian ignored or missed some statement that the patron made indicating what resources he or she had already checked.

Table 9: There is a closed-ended question at the end of the initial interview confirming that the librarian understands the user's inquiry (N = 428)

Response	% of responses
Yes	36.7
No	63.3

For the transcripts in which there is no closed-ended question at the end of the session, the comments indicated the following reasons why this was so:

- Technical problems or the patron disconnected,
- A closing question is unnecessary due to the session being very short,
- A closing question is unnecessary due to the patron being very clear about their information need,
- The patron thanks the librarian before the librarian has a chance to ask this question,
- The librarian did not conduct any reference interview or ask any questions to clarify the patron's information need during the transaction,

Table 10: There is evidence of the user's satisfaction (N = 428)

Response	% of responses
Yes: Strong evidence of satisfaction	27.6
Maybe: Indirect evidence of satisfaction	33.4
No: Strong evidence of dissatisfaction	2.8
Indeterminate: No evidence of satisfaction or dissatisfaction	36.2

For the transcripts in which there is no or indirect evidence of the user's satisfaction, the comments indicated the following reasons why this was so:

- Technical problems or the patron disconnected,
- The patron was impatient,
- The patron had unrealistic expectations about the scope of the service offered (the patron wanted the librarian to do their work) or about the speed with which the question could be answered, and
- The patron may have been satisfied with the transaction, but was not satisfied with the answer provided.

Table 11: The librarian was courteous (N = 428)

Response	% of responses
Very courteous	28.3
Courteous	47.4
Neutral	20.8
Rude	3.3
Very rude	0.2

For the transcripts in which the librarian was rude, the comments indicated the following reasons why this was so (there were no comments submitted with the single transcript in which the librarian was rated as being very rude):

- The librarian did not make sufficient effort to interact with the patron,
- The librarian was overly brusque, and
- Incorrectly regarded as a problem: The librarian refers to the patron as “Patron,” instead of by name (see the discussion of this in the Methodology section).

Table 12: The librarian was patient (N = 428)

Response	% of responses
Very patient	26.4
Patient	39.7
Neutral	25.9
Impatient	7.0
Very impatient	0.9

For the transcripts in which the librarian was impatient or very impatient, the comments indicated the following reasons why this was so:

- The librarian was frustrated by technical problems,
- The librarian did not conduct any reference interview or ask any questions to clarify the patron’s information need during the transaction, and
- The librarian sent links to the patron faster than the patron could reply to them.

Table 13: The librarian was enthusiastic (N = 427)

Response	% of responses
Neutral	43.1
Enthusiastic	32.8
Very enthusiastic	19.9
Unenthusiastic	3.7
Very unenthusiastic	0.5

For the transcripts in which the librarian was unenthusiastic (there were no transcripts in which the librarian was rated as being very unenthusiastic), the comments indicated the following reasons why this was so:

- Technical problems or the patron disconnected.

Correlation Analyses

The tables presented above are simple analyses of data, one table per transcript review question. The results between sets of two questions were also cross-tabulated, in order to determine if any correlations exist between the results from these sets. There were 13 multiple-choice questions in the transcript review, which means that there would be

several thousand cross-tabulations of sets of two questions. Obviously not all of these cross-tabulations will be presented here; those that are presented here are only those in which a very strong correlation was found, or for which the literature or common sense predicts a correlation (see, for example: Dervin & Dewdney, 1986; Saxton, 1997).

Table 14: The librarian used appropriate information resources to answer the question X The user is given one or more specific, authoritative source(s) to support the librarian’s answer (N = 226)

Appropriate Resources	Authoritative Resources	
	Yes	No
Yes	61.5	4.9
Mostly	24.8	3.1
Some	3.5	0.9
No	0.0	1.3

Overwhelmingly, when the librarian provided appropriate resources, those resources were also authoritative (or vice versa: when the librarian provided authoritative resources, those resources were also appropriate).

Table 15: The question is answered completely and correctly X The librarian used appropriate information resources to answer the question (N = 428)

Complete & Correct	Appropriate Resources			
	Yes	Mostly	Some	No
Complete & correct	35.0	14.5	2.1	0.7
Incomplete but correct	8.4	9.4	6.8	2.1
Incomplete and incorrect	0.7	1.2	1.1	0.9
Incorrect	0.0	0.2	0.5	0.2
No answer provided	2.8	1.2	2.3	9.8

When an answer was complete and correct, the resources provided were entirely or mostly appropriate. When an answer incomplete, but what was provided was correct, the resources provided were entirely, mostly, or partially exhaustive. When no answer was provided, the librarian also did not provide any appropriate resources.

Table 16: Open-ended or neutral questions are asked at the outset of the transaction to clarify the information need X The librarian told the user what s/he was doing as the transaction progressed (N = 428)

Neutral Questions	Librarian Communication	
	Yes	No
All questions asked at the outset of the transaction are open-ended or neutral.	22.2	5.1
Some questions asked at the outset of the transaction are open-ended or neutral.	12.9	5.1
All questions asked at the outset of the transaction are	6.5	4.4

closed-ended.		
No questions are asked at the outset of the transaction.	16.8	8.9
Open-ended and neutral questions are not needed in the transaction.	12.2	5.8

When the librarian told the user what s/he was doing as the transaction progressed, all or some of the questions that the librarian asked were neutral questions, or else no questions were asked.

Results Analyzed by NCKnows vs. 24/7

For the transcript review we masked the actual transcript numbers so that the reviewers would not be able to identify the transcripts that were reviewed. We, however, kept track of which transcript number in which packet corresponded to what actual transcript number. So, at the conclusion of the transcript review, we were able to match reviews to the actual unmasked transcript that were reviewed.

Using this reconstructed data, the transcript review responses were analyzed according to whether a session was handled by an NCKnows librarian or a 24/7 staff member. Not all of the results from the 13 questions in the transcript review will be presented here; what is presented here are those results in which a significant difference was found between NCKnows librarians and 24/7 staff members, and the results from questions which comments by NCKnows librarians indicated were important.

There was little evidence that the responses from NCKnows librarians are better or worse than those responses from 24/7 staffers. On the whole, NCKnows librarians were rated slightly but not significantly higher than 24/7 staffers for most questions asked in the transcript review.

Table 17: The question is answered completely and correctly (N = 428)

	% of responses	
	NCKnows librarian	24/7 staff
Complete & correct	53.9	48.9
Incomplete but correct	26.6	26.7
Incomplete and incorrect	3.0	6.1
Incorrect	1.0	0.8
No answer provided	15.5	17.6

Table 18: The librarian told the user what s/he was doing as the transaction progressed (N = 428)

	% of responses	
	NCKnows librarian	24/7 staff
Yes	72.1	67.2
No	27.9	32.8

Table 19: The librarian used appropriate information resources to answer the question (N = 428)

	% of responses	
	NCKnows librarian	24/7 staff
Yes	47.1	46.6
Mostly	26.6	26.0
Some	12.5	13.7
No	13.8	13.7

Table 20: Open-ended or neutral questions are asked at the outset of the transaction to clarify the information need (N = 428)

	% of responses	
	NCKnows librarian	24/7 staff
All questions asked at the outset of the transaction are open-ended or neutral.	31.0	19.1
Some questions asked at the outset of the transaction are open-ended or neutral.	16.8	20.6
All questions asked at the outset of the transaction are closed-ended.	11.8	9.2
No questions are asked at the outset of the transaction.	23.6	30.5
Open-ended and neutral questions are not needed in the transaction.	16.8	20.6

Table 21: There is evidence of the user's satisfaction (N = 428)

	% of responses	
	NCKnows librarian	24/7 staff
Yes	32.0	17.6
Maybe	32.3	35.9
No	3.0	2.3
Indeterminate	32.7	44.3

Results Analyzed by Academic vs. Public Library

Using the reconstructed transcript review data, the responses were analyzed according to two criteria:

- Whether a session came into NCKnows via an academic or a public library's queue, and
- Whether a session was handled by a librarian in an academic library or a public library.

Again, not all of the results from the 13 questions in the transcript review will be presented; what is presented here are those results in which a significant difference was found between academic and public libraries, and the results from questions which comments by NCKnows librarians indicated were important.

Responses from public librarians were rated significantly higher than responses from academic librarians, for many questions asked in the transcript review, for sessions that came into NCKnows both through academic libraries' queues and public libraries' queues.

This finding does not hold across all ratings for all questions, but usually holds for the highest rating in any given question. See, for example, Table 22: public librarians are rated higher for providing complete and correct answers to questions that came into NCKnows through both academic and public libraries' queues. For answers that were incomplete but what was provided was correct, however, academic librarians' responses were rated higher.

Table 22: The question is answered completely and correctly (N = 253)

	% of responses			
	Academic queue		Public queue	
	Academic librarian	Public librarian	Academic librarian	Public librarian
Complete & correct	40.0	62.0	43.1	69.6
Incomplete but correct	36.4	22.5	22.4	23.2
Incomplete and incorrect	3.6	1.4	3.4	2.9
Incorrect	0.0	0.0	5.2	0.0
No answer provided	20.0	14.1	25.9	4.3

Table 23: The librarian told the user what s/he was doing as the transaction progressed (N = 253)

	% of responses			
	Academic queue		Public queue	
	Academic librarian	Public librarian	Academic librarian	Public librarian
Yes	69.1	74.6	72.4	79.7
No	30.9	25.4	27.6	20.3

Table 24: The librarian used appropriate information resources to answer the question (N = 253)

	% of responses			
	Academic queue		Public queue	
	Academic librarian	Public librarian	Academic librarian	Public librarian

Yes	38.2	56.3	43.1	63.8
Mostly	23.6	21.1	22.4	21.7
Some	12.7	7.0	19.0	8.7
No	25.5	15.5	15.5	5.8

Table 25: Open-ended or neutral questions are asked at the outset of the transaction to clarify the information need (N = 253)

	% of responses			
	Academic queue		Public queue	
	Academic librarian	Public librarian	Academic librarian	Public librarian
All questions asked at the outset of the transaction are open-ended or neutral.	29.1	43.7	30.0	32.5
Some questions asked at the outset of the transaction are open-ended or neutral.	12.7	18.3	12.0	11.7
All questions asked at the outset of the transaction are closed-ended.	14.5	8.5	16.0	13.0
No questions are asked at the outset of the transaction.	27.3	9.9	26.0	31.2
Open-ended and neutral questions are not needed in the transaction.	16.4	19.7	16.0	11.7

Table 26: There is evidence of the user's satisfaction (N = 253)

	% of responses			
	Academic queue		Public queue	
	Academic librarian	Public librarian	Academic librarian	Public librarian
Yes	23.6	31.0	27.6	42.0
Maybe	34.5	31.0	27.6	34.8
No	0.0	2.8	3.4	0.0
Indeterminate	41.8	35.2	41.4	23.2

A possible hypothesis about why public librarians' responses were rated higher than academic librarians, for the highest rating in any given question, is service philosophy. In the interviews that we have recently been conducting, several librarians suggested that there should be policies regarding whether NCKnows should provide patrons with answers or resources. This is determined largely by the question itself (whether it is answerable at all), the policies at a particular library, and by the librarian's personal style. Part of an academic library's mission is to support education in their institution, and part

of this means encouraging students to do their own research. Thus, it is likely that an academic librarian may only partially answer a question, and provide some but not all resources to answer a question, in an effort to get the patron to conduct some of their own research. It seems less likely that a public librarian would have this attitude (see, for example: White, 1997; Saxton and Richardson, 2002).

The fact that public librarians were rated higher than academic librarians, for many questions, does not mean that academic librarians performed poorly in the transcript review. Recall from the overall analysis that ratings were high across the board.

Recommendations

Every closed-ended question in the transcript review was followed by an open-ended Comments field. Most of the recommendations made here come from those comments.

Recommendation: Check via which library's queue a patron came into NCknows. This allows the librarian to handle several problematic situations:

- Allows the librarian to figure out what library the patron probably thinks they are contacting, & the librarian is located. (See the next recommendation.)
- Allows the librarian to figure out what resources the patron will have access to locally.
- Allows the librarian to figure out if the patron will need password access to NC LIVE. (In this vein, a recommendation from the interviews: there needs to be more thorough resources on the participating libraries, their hours, policies, access to databases, etc., & these resources need to be well organized so that librarians can access them easily in the "heat" of a chat session.)
- Allows the librarian to use Ipswitch to contact a librarian in the patron's library if necessary, or forward a follow-up question to that library.

Recommendation: Explain the nature of the NCknows service to the patron: that it is staffed by librarians around the country, and the librarian with whom the patron is chatting may not be in their local library, nor even in North Carolina.

Recommendation: Explain what you are doing throughout the chat session.

- Page-pushing and co-browsing are unfamiliar technologies for many patrons, so explaining what you are doing when using these is especially important.
- Take the time to provide bibliographic instruction in the use of whatever resources you are providing to the patron.
- Remember that the patron has no way of knowing when you do something offline, so take the time to explain what you are doing.
- More scripts should be created, to cover a wider range of possible librarian behaviors. This has also come up in the interviews, & will be discussed more in that report. Several librarians have suggested that more scripts would save time, but would be useful only if they were better organized. Here are some suggestions for how to organize scripts:

- By part of the reference transaction: e.g., Opening, Interview, Searching, Closing, etc.
- By 24/7 functionality: e.g., Login/Welcome, Page-pushing, Co-browsing, Logout/Goodbye, etc.
- By FAQs: e.g., library hours, OPAC, renewing books, genealogy, etc.

Recommendation: Provide the patron with more rather than fewer resources.

- Provide a variety of resources if possible.
- Use NC LIVE resources.
- In this vein, a recommendation from the interviews: NC LIVE needs to be better organized so that librarians can easily access resources in the “heat” of a chat session. Also, some brush-up training might be useful on what is contained in NC LIVE. Here are some suggestions for how to organize NC LIVE:
 - By age appropriateness: e.g., K-6, Middle school, High school, Higher ed, Adult, etc.
 - By question type: This will require research to identify the types of questions that NCKnows receives. We will conduct this type of question analysis for the final NCKnows evaluation report. Some suggestions for categories based on librarians’ comments in the interviews include: categories to correspond with grade school curricula, categories to correspond with higher ed majors, genealogy, etc.

Recommendation: Attempt to reproduce your behavior on the reference desk.

- Even though chat lacks certain cues (body language, facial expressions, etc.), a good chat session is one in which there is good communication between the librarian and the patron, in which the librarian attempts to create that same rapport with the patron.
- Be careful with your language. Brief statements, lacking non-verbal cues, can be mistaken for rudeness. Particularly when a patron has apparently vanished, be careful: asking “are you still there?” can come across as rude.
- Ask open-ended & neutral questions to try to draw out the patron & elicit more information about their information need.
- Try to clarify the patron’s question at the beginning of the chat session. As at the desk, this results in a more efficient chat session.
- Try to conduct a reference interview. As at the desk, this helps you to figure out what the patron really wants and in what format before you jump into searching.

Recommendation: Ask the same types of questions in chat as at the desk.

- Ask what resources the patron has checked previously.
- Conclude the session with a question like, “Has this question been answered to your satisfaction?” “Is there anything else?” etc.

Recommendation: Don’t be afraid to conclude a chat session with an incomplete answer. However, be sure to ask for an email address or a phone number to follow up with the patron.

- There needs to be better defined & perhaps stricter policies for using QRC (How often should librarians check QRC? Who in a library should check?) & for follow-ups in general (Should follow-ups always be handled via QRC? When is it ok for the librarian to follow up using their own personal email account? When should a question be forwarded to a specific library or librarian?)

Recommendation: There should be clearer guidelines regarding the proper use of the Resolution Codes at the conclusion of chat sessions. There should also be some “enforcement” of the use of these codes, perhaps via the mechanism of future transcript peer evaluations. 24/7 has some policies on Resolution Codes in their Reference Collaborative Library Policy Manual, but they are interspersed in this document, not clearly laid out in one place. Furthermore, even if everyone read these policies initially, they are not applied consistently by NCKnows librarians now. Two pieces of evidence support this: (1) We have found several transcripts in which two NCKnows librarians were chatting and clearly practicing, but the session was closed with COMP code instead of TEST; and (2) We have found several transcripts in which the patron “vanished” or the session was disconnected for technical reasons, but the session was closed with COMP code instead of TECHPROB, WCS-ABAN, or WCS-GONE, which are intended to indicate problem transcripts of these types. This leads us to believe that there are probably other instances of inconsistent use of Resolution Codes that we have not discovered. Consistent use of Resolution Codes would be extremely useful for future evaluation efforts; inconsistent use of Resolution Codes leads to a situation in which certain types of sessions can only be reliably identified by eyeballing every chat transcript, which is untenable now (as of the end of July NCKnows has handled around 4,500 chat sessions) and will only get worse as the service scales up. On the one hand, 24/7 should make their policies on Resolution Codes clearer. But on the other hand, NCKnows should not wait on 24/7’s goodwill in this, and besides, 24/7 has no enforcement “teeth.” If NCKnows wishes to maintain a culture of assessment throughout the life of the life of the service, this is one important issue that will make data analysis for evaluations much easier in the future.

Conclusion

There were three evaluation questions that this transcript review was designed to answer. The answer to the first question is that overall, the quality of reference service being provided by NCKnows is high. The answer to the second evaluation question is that there is no significant difference in the quality of service provided by NCKnows or 24/7 librarians. The answer to the third evaluation question is that the quality of the service provided by NCKnows’ public librarians is higher than the service provided by academic librarians. A possible explanation for this last finding may be found in the service philosophies of public versus academic libraries.

As with any new service, even one doing as well as NCKnows is, improvements can be made. Some improvements were suggested directly by librarians in their comments from the transcript review, and some improvements can be inferred from similar comments made by several librarians. Some of these recommendations may be implemented as

changes to or official policies of the NCKnows service, and some recommendations may be implemented informally as guides for librarians' behavior in chat sessions.

The next step in the NCKnows evaluation is the interviews with all of the librarians involved in NCKnows. Almost all of these interviews have now been conducted, and a report on this will be prepared and circulated soon. These interviews will expand on many of the recommendations made in this report, and will provide additional recommendations.

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