

Analysis of E-Mail Reference Services

at
Mabee Library, Washburn University, Topeka, Kansas

By

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Executive Summary

A data set of 168 e-mail reference transcripts from Mabee library's e-mail reference service was analyzed to develop a detailed understanding of the service. The researchers coded the textual data with the specific objectives of arriving at an assessment of the overall use of the e-mail reference service by patrons; an analysis of patrons who utilize the service and the questions they pose; a description of e-mail transactions as they unfold in the case of e-mail reference; and an examination of the tools and materials utilized in the context of e-mail reference.

Our analysis of the e-mail reference transcripts of the Mabee library demonstrates that the e-mail reference services are being used on a regular basis. All patron groups take advantage of the ability to submit queries online at any time of the day throughout every day of the week. Most queries are met with a prompt reply within 24 or 48 hours, except during academic breaks and holidays. The reference librarians handle an equal amount of reference and non-reference questions coming through the online query submission form. Most of the questions are fully answered with just one interaction. The answers most commonly include factual information, reference to sources of information, and conceptual explanations. Responses to queries typically include a combination of approaches. A relatively high number of questions, however, have to be addressed by librarians outside of the reference personnel. Those referrals often require the attention of the archives librarian(s), whose contributions remain unacknowledged in the reference transcripts. When forwarding a query to the appropriate non-reference librarian, the personnel more often than not keep the patron uninformed of the referral.

Recommendations

The online query submission form can create accurate perceptions in patrons as to how it will take for the librarians to respond to a query, if the form includes a message right before holidays and academic breaks, which informs patrons how long the library will be closed.

The process of documenting the e-mail reference service can be improved by requesting that all personnel copy their reference e-mails to the general service e-mail address, so that archives librarians' contributions to the service can be recognized. This is especially important if the e-mail reference transcripts are consulted for service and personnel assessment.

The promptness of the e-mail reference service can be improved through policy. A policy that requires librarians to inform patrons when they are forwarding queries to staff outside of the reference service will demonstrate to patrons that the query is being processed, rather than extending patrons' waiting time without any clarification.

The handling of queries by reference librarians can be improved through additional training. The areas that can benefit most include:

- training regarding the presentation of factual information to patrons that will decrease the number of instances when facts are cited without a reference to their source;
- training regarding instructional techniques, such as conceptual explanations, and how those can be enhanced by specific examples, especially in a context where most transactions consist of one question-answer interaction;
- training regarding the instructional value of describing what tools and materials the librarian has used to locate an answer and how those tools can be useful to the patron.

Introduction

E-mail reference services, as opposed to their in-person counterparts, create a record of each reference transaction in the form of an e-mail thread, including all e-mail interactions needed to answer a reference question. The affordances of a stable record of each transaction allow us to examine how a reference interview can be affected by the mediation of asynchronous e-mail communication, to analyze what types of questions patrons bring to the service, to glean how reference librarians approach various types of inquiries. Hence, the unfortunate loss of direct human contact is at least in part counter-balanced with the ability to create a detailed and informative picture of a library's e-mail reference services.

The current study analyzes the e-mail archives of the reference services at Mabee library, Washburn University, Topeka, Kansas. Our primary goal has been to develop a detailed understanding of the e-mail reference service. To achieve an informative description of the service, we focused on the following specific objectives:

- an assessment of the overall use of the e-mail reference service by patrons;
- an analysis of patrons who utilize the service and the questions they pose;
- a description of e-mail transactions as they unfold in the case of e-mail reference;
- and an examination of the tools and materials utilized in the context of e-mail reference.

The data analyzed in this study consists of e-mail transactions taking place in the time span between the beginning of 2002 and June 2005 (three years and a half). All e-mail transactions were delivered to the researchers clean of identifying information, such as names of patrons or librarians and their e-mail addresses. All e-mail transcripts in the archive were considered in the study, except for several orphan cases that included only a question or only an answer without a complete record of the reference transaction. After excluding those incomplete transcripts, the data set consisted of 168 transactions.

The researchers chose a methodology appropriate for analyzing textual data. We coded the text of each e-mail transaction to capture all available details. Such a methodology allowed us to start from the text of the transactions, instead of bringing pre-existing categories to it. Multiple iterations through the transcripts allowed for a detailed list of categories to emerge, refining the codes with each iteration to make them more specific and increase their informative power. Furthermore, the accuracy of the coding was ascertained at 94% -- tested by a complete recoding of randomly selected transactions that amounted to 10% of the data set.

The main aspects that emerged from the data can be grouped in the following way:

- general transaction details, such as time, day of the week, wait time for initial response;
- patron self-identification, as captured by the online query submission form;
- type of each question (reference/non-reference, factual/finding, etc.);
- purpose and corresponding disciplinary area of each query;
- answer completion stage (completed with initial response, with follow-up, etc.);
- answer characteristics (functional, factual, and instructional);
- tools used by both the patron and the reference librarian.

A complete listing of the codes can be found in Appendix A: Master Code List (p. 13). Detailed definitions of each code along with representative examples will be provided as various aspects of the e-mail reference service are discussed in the following sections of this report. Each of the sections will present and analyze our findings.

E-Mail Reference Service

The Mabee library e-mail reference service has seen steady use until the end of 2004. The archives include 51 transactions in 2002, 43 in 2003, and 36 in 2004. With the beginning of 2005, however, its use by library patrons has doubled with 38 e-mail transactions handled in the first six months of the year, close to the average annual transactions from previous years.

Time of the day

One of the strongest advantages of an e-mail reference service is the ability of accept questions from patrons 24 hours. Mabee library patrons have utilized the service both during and outside traditional work hours. 55% of queries are submitted between 9am and 5pm, but another 45% are submitted in the evening or early morning hours – 30% in the evening and 15% between midnight and 9am.

This pattern suggests that Mabee library patrons are taking advantage of the convenience an e-mail service can offer. A substantial part of patrons must be using the library resources in the evening and early morning, and submitting reference questions as they arise.

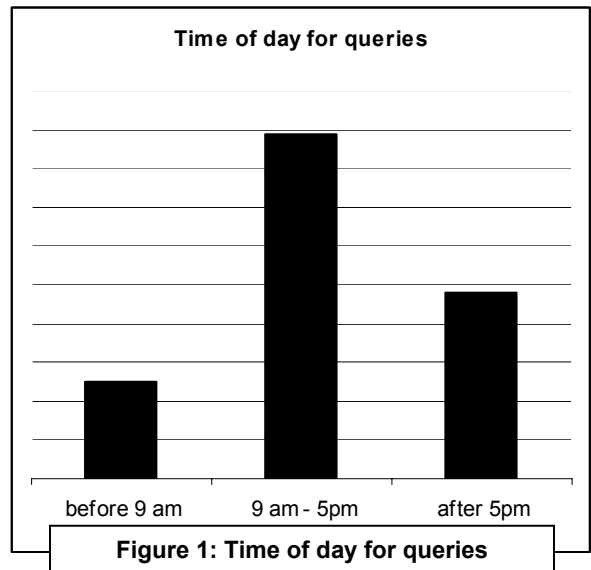


Figure 1: Time of day for queries

Day of the week

Patrons have submitted 18% of queries during the weekends. The overall amount of questions submitted on each work day remains relatively similar, except for Mondays when we see consistently fewer e-mail queries than on other work days.

The peak days for various types of patrons can give us indications of patron's research practices.

Faculty and staff, for instance, submit questions mainly during week days, using the weekends only very rarely. Patrons non-affiliated with Washburn University submit questions early in the week – their use of the service starts increasing on Sundays and peaks on Wednesdays, after which it drops to its lowest point on Saturdays.

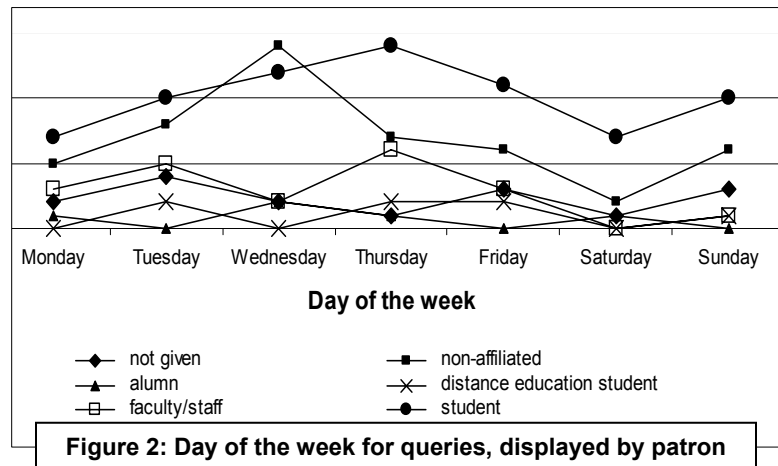


Figure 2: Day of the week for queries, displayed by patron

Students' use of the e-mail reference service starts increasing on Sundays and reaches a peak on Thursdays. It starts dropping on Fridays and gets to its lowest point on Saturdays. The pattern

of use by distance education students is similar, although the number of questions by this patron group is surprisingly low. The researchers speculate that some distance education students might have self-identified as “students” in the online submission form.

Waiting time for initial response

The online submission form for e-mail reference questions reassures patrons that they can expect a response to their e-mail within 24 hours. Hence, to measure the promptness of the e-mail reference service, we used waiting time for initial response, independent of the content of the response. Sometimes the initial e-mail from a librarian will be an answer to the patron’s question, at other times it will be follow-up that requires further interactions before the question can be completely answered.

More than half of all queries (60%) were answered within 24 hours of the patron’s form submission, with another 17% answered within 48 hours.

Moreover, some of the queries that took several days to be answered were submitted during holidays. For instance, a patron submitted a query on December 30, 2003 and received a response on January 3, 2004. Another patron submitted a query on October 19, 2004 – exactly before fall break started – and received a response on October 25, 2004, which is the day on which classes resumed after the break.

While holidays and academic breaks account for most of the high waiting times, the expectation for a response within 24 hours might be strong in patrons. If the online form communicates estimated response times during breaks, patrons will have a clear idea when to expect an e-mail from the reference librarians.

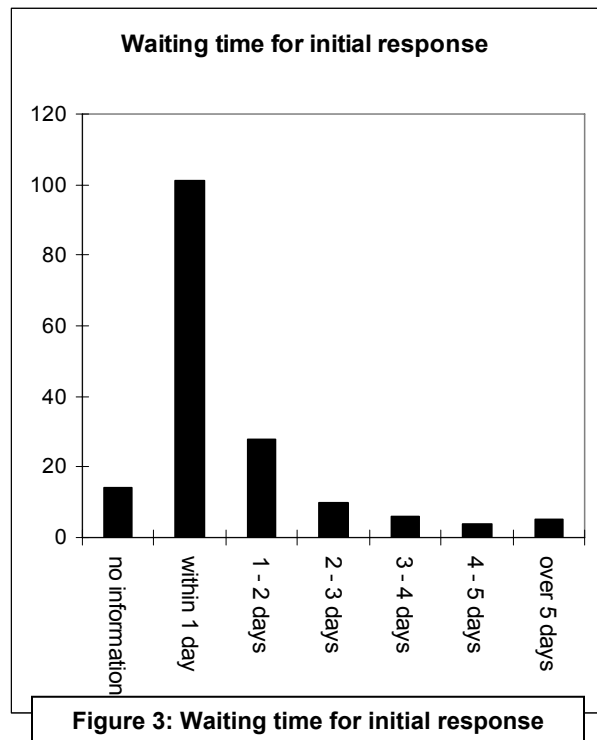


Figure 3: Waiting time for initial response

Patrons & Their Questions

All patron groups approach the e-mail reference service with various questions. We have classified the types of questions into two large categories: non-reference and reference questions.

Non-reference questions can be further subdivided into questions about the library units or about the reference services. Questions about the reference services include (1) queries regarding technology problems, such as access to a specific database; (2) queries regarding access or permissions, such as how to use resources from off-campus or order materials through interlibrary loan; and (3) 'other' queries is a category of miscellaneous questions mostly regarding requests to have copies of library materials mailed to the patron. Non-reference questions about library units include (1) queries about library hours; (2) queries about library rules, such as rules about copying materials, about access for patrons not affiliated with the university, rules about faculty use of the reserves; (3) queries about library contact information; and (4) 'other' queries is a category that captures miscellaneous questions regarding library units, such as requests for fines to be removed, for information online to be update, for employment details, etc.

Reference questions submitted by patrons fall into three categories: factual, finding, and teaching. Factual questions can be about citation elements, the library ownership of specific print or digital materials, or 'other' ranging from queries about the number of a specific baseball player to questions about the presence of organizations in the area. Finding reference questions differ from factual ones in that they request one or more resources, rather than a factual answer. Finding questions can be broad or narrow depending on how specific the scope of the search is and whether the patron identifies a limited number of resources they seek – three articles on a certain topic, for instance. Teaching reference questions request information on how to perform various aspects of research. Patrons might be asking to learn a tactic, finding a subject heading or citing correctly in APA format, for example, or to learn a tool (such as a database), or to learn a process.

The queries submitted by Mabee library patrons split evenly between reference and non-reference questions (exactly 50% each). The high number of non-reference questions can be partly accounted for by an ongoing difficulty with the login for databases, which seems to require patrons to use their university ID and password, but some transition in the university ID system left many patrons unsure how to get a new ID. 16% of all questions relate to the use of university IDs for the database login system.

Questions by non-affiliated patrons

Patrons who are not affiliated with Washburn University ask many factual reference questions (42% of questions by this patron group) as can be expected. Surprisingly, almost a quarter of their questions relate to non-reference issues regarding the library. Typical examples include "Can I get a borrower's card?" or "How much are you going to charge me for a library card?." Another interesting type

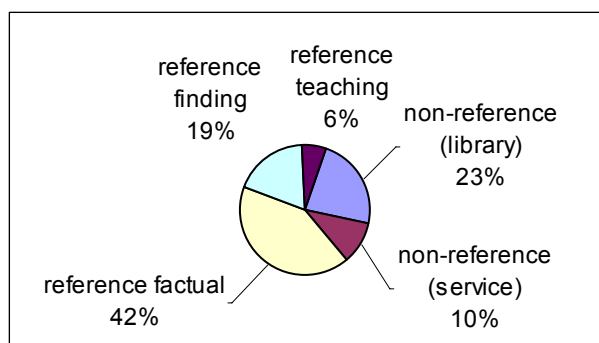


Figure 4: Questions by non-affiliated patrons

of questions by non-affiliated patrons that accounts for 19% of their questions relates to finding information, i.e. “Can you help me with information of the Black Farmers history in/around Nicodemus?”

Questions by faculty / staff

The online submission form does not distinguish between faculty and staff. The category patrons can choose is ‘faculty / staff’ instead. Questions posed by faculty / staff are primarily non-reference in nature – with 50% of them about the reference services and 20% about the library. Out of the reference questions this patron group submits, one can expect a high number of finding questions in which faculty can use the reference service for help with their research. However, the common type of reference questions by faculty / staff is factual reference. Questions range from “I am looking for a contractor by the name of ...” to “Where is the mission statement of Washburn listed?”

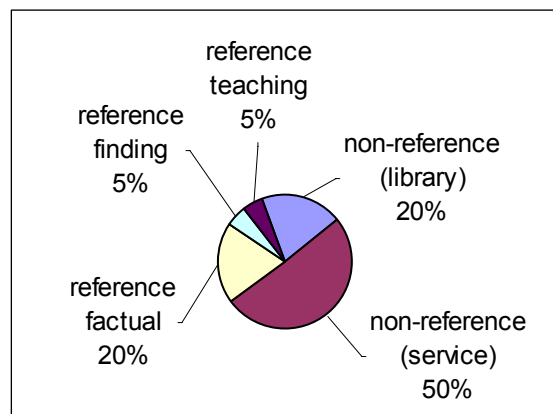


Figure 5: Questions by faculty / staff

Questions by students

Questions submitted by students represent a more balanced mix of interests. The large number of non-reference questions about the reference services can be accounted for by the difficulties students seem to be experiencing with the new IDs. Otherwise, students are the primary patron group who ask teaching reference questions, such as “I was wondering if you could tell me how to do a bibliography on an interview” and “How can I find area libraries that hold the journal *Ursus*?”

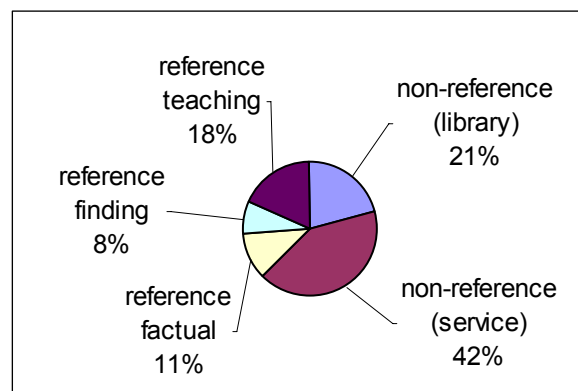


Figure 6: Questions by students

Disciplinary area of questions

Because of the academic context of the Mabee library, the researchers found it necessary to trace the disciplinary areas of queries posed by patrons. Although a large number of the questions cannot be directly associated with an academic discipline, those which relate to disciplines comprise an interesting mix. For example, queries submitted by faculty / staff either do not relate to a discipline (85% of the cases) or relate to the social sciences (15%). No other disciplinary areas are represented in queries by faculty / staff. Students and patrons not affiliated with the university ask mostly questions that do not relate directly to disciplines; when they do, the disciplines span the arts and humanities, the social sciences, and the natural sciences. Arts and humanities and social sciences account for most discipline-specific questions by non-affiliated patrons, while the social sciences alone account for many of the discipline-specific queries by students. A detailed listing of questions by disciplinary area and patron group can be seen below.

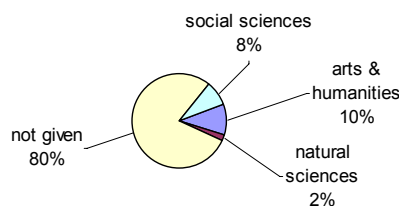


Fig. 7: Areas – non-affiliated

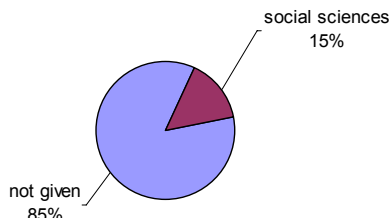


Fig. 8: Areas – faculty/staff

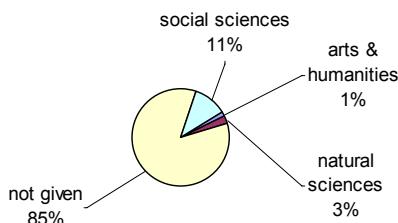


Fig. 9: Areas – students

Stated purpose of queries

Because so many questions cannot be sufficiently described by type and disciplinary area, we noted the stated purpose for each query. The stated purpose refers to the intended use for the information acquired through the Mabee library reference services. The types of purpose we identified are (1) educational, when the query arises from situations such as a course assignment or an academic thesis; (2) research, when the information is needed in relation to research that is unspecified in nature; (3) personal use, such as a hobby; or (4) application, when the purpose is not clear but a specific application for the needed information is shared, such as “Where is the website to fill out an application for employment with ...?”

In many queries, the purpose is not given. When it is, however, we see differences in how various patron groups use the e-mail reference service.

	Queries by non-affiliated patrons	Queries by faculty / staff	Queries by students
Educational	2%	5%	30%
Research	10%	10%	1%
Personal use	17%	5%	0%
Application	19%	20%	6%
Not given	52%	60%	63%

Table 1: Stated purpose of queries

For example, queries related to information needed for personal use are highest among non-affiliated patrons and non-existent among students. The opposite is true for educational use with students asking 30% of their questions in relation to academic assignments. Interestingly, non-affiliated patrons and faculty / staff make the same or very similar use of the e-mail reference service when they need help with research broadly defined or with information for a specific applied use. Finally, non-affiliated patrons seem most willing to explain the purpose of their query, leaving only 52% of the queries without such an explanation, compared to higher numbers of unspecified purpose by faculty / staff and students.

E-Mail Transactions

The responses to patrons' queries can be characterized by exploring two distinct aspects. First, answer completion stages demonstrate how the reference interview plays out in the context of asynchronous electronic communication. Secondly, all the facets of the response show the various approaches reference librarians take to answering patrons' queries.

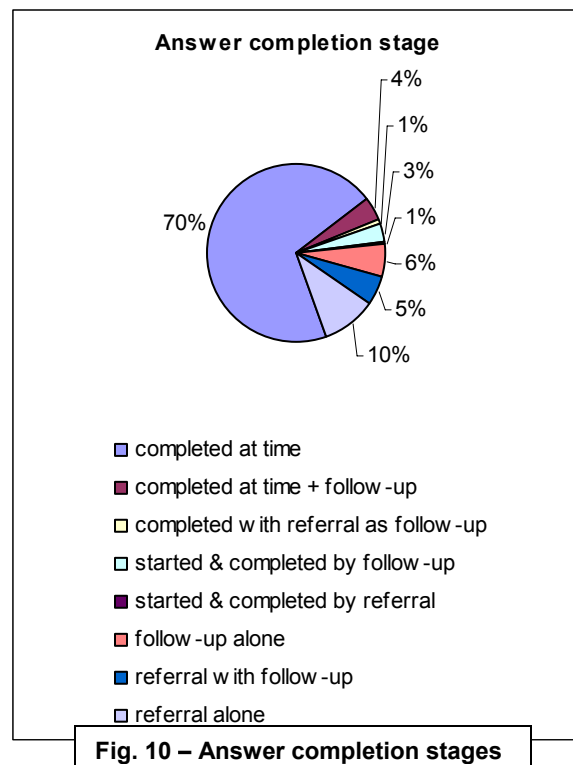
Answer completion stages

To capture the interaction between a patron and a reference librarian throughout an e-mail reference transaction, we categorized the manner in which each transaction reached its completion. The answer completion stages can be grouped as follows:

- Transactions were completed with the initial response. In those cases, they ended either without further interactions, or with a follow-up that offers additional information, or with a follow-up that constitutes a referral to another library unit in addition to the initial answer.
- The actual answer of a patron's query was only started with the initial response, but was later completed either through a follow-up e-mail or through a referral.
- Transactions were not completed by the reference librarian. Instead the patron received either a follow-up e-mail that ended the transaction without responding to the query, or a follow-up that informed patrons about the referral of their query to someone outside of the reference service, or a direct referral of the queries without informing patrons about it.

As Figure 10 indicates, 70% of all queries were completed with one e-mail response by the reference librarians. Another 5% were completed with the initial response, but the librarian took the extra step of providing additional information in a follow-up e-mail or following up with a referral that can offer extra information. 4% of all queries could not be completed with the initial response. In those cases, the librarian engaged the patron with the initial response and completed the transaction with additional e-mails. For example, an initial response that started with "I have several pre-1966 photos which I can copy and send to you, but first I have a few questions" was followed by another e-mail exchange before the transaction could be completed.

6% of the queries were not completed at all. The initial response constituted a follow-up that did not answer the patron's query. The librarian's initial e-mail either asked a clarification question, such as "I'm not sure



which site you are referring to. Did you normally find this link to government periodicals on the Mabee Library Web site somewhere?” Sometimes the initial e-mail confirmed that the query had been received and gave an estimate when the librarian would be able to write back with more information, such as “I will try to find the information you require later today when my reference shift is over and I will have the information as soon as I can.” Although the reference transcripts do not contain any indication of the subsequent completion of those 6% of the transactions, the researchers speculate that the lack of further e-mails might be due to incomplete archiving, rather than failure to complete the transactions. In the cases when the librarian asks a question, the patron might have either found an answer in the meantime or otherwise decided not to continue interacting with the reference librarian.

Finally, it is noteworthy that 15% of all queries used referrals as the primary approach to addressing a patron’s question, in addition to the other 2% of queries that included a referral for a partial answer or as the source of additional information. The referrals were almost always to the archives librarians. Currently, the interactions of the archives librarians with patrons are not captured in the reference transcripts, so their contribution to the service remains undocumented.

Facets of the response

The content of responses to patrons’ queries can be characterized by the type of information they contain. Responses exhibited characteristics that fall into three broad categories: functional, factual, and instructional. Those characteristics are not mutually exclusive, as all the other aspects of the transaction, because one response can combine factual information with instructional content, for instance.

Functional content refers to responses or parts of them that do not in themselves constitute an answer, but play a role in the overall interaction. The functional facets of responses include:

1. ACKNOWLEDGMENT OF THE QUERY, which lets the patron know that the query has been received, is being addressed, and a response is forthcoming, such as “I will need to do some checking to see what direction to go on this.” Such functional information was present in 8% of librarian’s e-mails.
2. REQUEST FOR MORE INFORMATION as in “Do you mean that you can’t find the citations for these articles? That you are trying to find them full text and cannot find them?” 8% of transactions included requests for additional information either as the sole content of an initial e-mail from the librarian or as part of an e-mail that contained at least a partial answer along with the request.
3. APOLOGY for delay or lack of information, such as “I apologize that you did not receive a response from us yesterday. We have had some staff sickness and vacations, and have been a little short handed.” Apologies were present in 9% of librarians’ responses.
4. REFUSAL to address the query, which occurred just once in response to a request for a mailing address and phone number – “This e-mail box is for answering library research questions only.”

Factual facets of responses capture the different approaches to presenting factual information to patrons. Often more than one approach is present in the same response:

1. SPECIFIC FACTUAL INFORMATION that is reported directly in the body of the e-mail response as in “the S.I.C. code of Southwest Airlines [i]s 4512.” Not surprisingly, factual

information was present in 40% of responses that addressed a wide span of query types, not just factual reference questions.

2. REFERENCES TO SOURCES OF INFORMATION can be either citations / titles of print materials or virtual addresses of electronic materials. For instance, the airline code above was accompanied by the following reference: "I looked in something called the 'Directory of Corporate Affiliations'." References were present in a mere 24% of responses, which indicates that sometimes factual information was offered without a clear sign of where it can be obtained or verified.
3. ATTACHED SOURCES OF INFORMATION refer to materials attached directly to e-mails, such as "I am sending you the full-text of two articles." This approach was very rare, occurring in a total of 3 transactions, which stands to reason given common copyright considerations for both print and electronic materials.

Instructional facets of responses refer to information that does not just answer a question, but contributes to the patron's understanding of a concept, material, strategy, or tool. They have the most potential to help patrons become more independent in their use of print and electronic materials.

1. EXPLANATIONS, such as "Some of the databases have full text articles and some of them do not. The databases that have a lot of full text are: Infotrac, PerAbs (in FirstSearch Select), WilsonSelect (in FirstSearch Select), and ABI-Inform (in FirstSearch Select). When there is no full text available, you have to come to the library and photocopy or request them on Interlibrary Loan" increase a patron's understanding of databases and the process of acquiring materials when full text is not available online. 22% of responses contained explanations.
2. EXAMPLES are not just stand-alone facts, instead they illustrate a point. In the case above, the four listed databases serve as examples. Interestingly, only 5.5% of responses included examples, which indicates that many of the explanations present in librarians' e-mails remained conceptual and abstract without illustrative examples to facilitate understanding.
3. STRATEGY DESCRIPTIONS can refer either to a recommended strategy for the patron to follow or to a description of the strategy the librarian used to obtain certain information. Strategy description is used most often in relation to search strategies, but it is not limited to searching, e.g. "First you need to decide what style is needed. Most classes at Washburn use APA or MLA style. Then you should go to this Mabee Library Web page: [url follows]..." Descriptions of strategies could be seen in 6% of librarians' responses.
4. ALTERNATIVE OPTIONS refer to alternative materials, tools, strategies, or even libraries offered in addition to the primary answer. For example, following an answer about relevant resources the Mabee library holds regarding a query, the librarian adds "You should also see if there is anything at your local library in Jackson County or if there is a Historical Society in Jackson County which could help." 13% of responses included alternative suggestions.
5. STEP-BY-STEP GUIDES are very specific directions on how to accomplish a task, such as "Click 'Online Resources'; Choose 'Alphabetical List'; Go to E for 'Expanded Academic ASAP' and click on that title." Such guides were used in 14% of responses.

Tools & Materials Used

Both the patrons' and the librarians' level of engagement with the tools and materials used to address a research problem can be captured only in a limited manner, because patrons seldom report how they have tried to research their query prior to posing a question and librarians sometimes offer an answer without specifying how they arrived at it.

Tools used by patrons

72% of patrons did not report the use of any tools or materials in an attempt to research their query. Patrons not affiliated with the university were least likely to report what, if any, tools they have already used. Students were most likely, relatively speaking, to explain what tools they have used.

In the cases when patrons did mention tools, the most common ones were the library databases and the library website. Interestingly, using the internet is reported as often as 'other' tools, which category captures primarily print materials, such as a specific reference publication. The most common tools reported by faculty / staff and by students were the databases, while non-affiliated patrons were the only ones who reported their use of the Web.

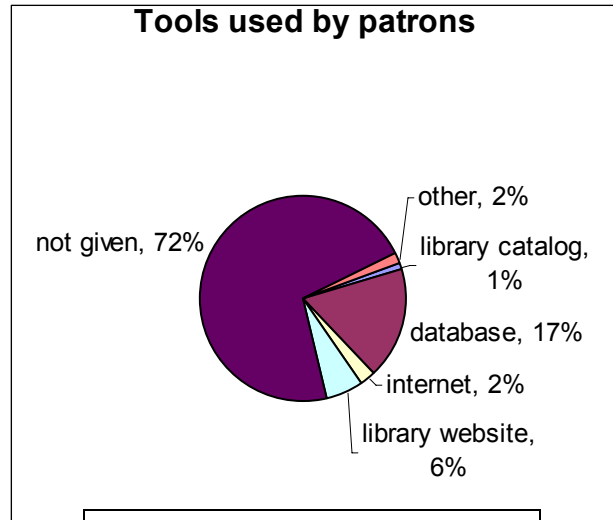


Fig. 11 – Tools used by patrons

Tools used by librarians

More importantly, however, the reported use of tools by librarians was substantially higher. In 36% of responses the librarians omitted any mention of the tools they used and in another 15% such information was not mentioned, but it was also not applicable to the type of response. In all other cases, librarians discussed what tools helped them obtain an answer. The most common tools were the library website and 'other' tools / materials, which included mainly print resources. Using the Web in general was reported in 9% of responses and the library databases were used in 4% of responses. The database of patron IDs seemed to be a commonly used tool for addressing technical questions about logging into the databases, which was mentioned in 5% of responses.

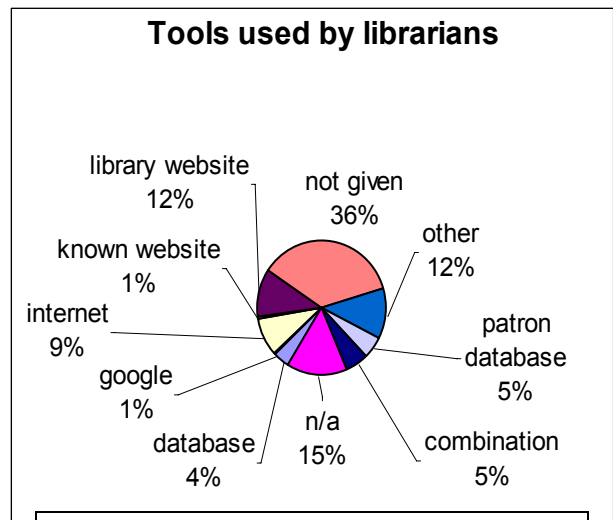


Fig. 12 – Tools used by librarians

Concluding Observations

Our analysis of the e-mail reference transcripts of the Mabee library demonstrates that the e-mail reference services are being used on a regular basis. All patron groups take advantage of the ability to submit queries online at any time of the day throughout every day of the week. Most queries are met with a prompt reply within 24 or 48 hours, except during academic breaks and holidays. The reference librarians handle an equal amount of reference and non-reference questions coming through the online query submission form. Most of the questions are fully answered with just one interaction. The answers most commonly include factual information, reference to sources of information, and conceptual explanations. Responses to queries typically include a combination of approaches.

A relatively high number of questions, however, have to be addressed by librarians outside of the reference personnel. Those referrals often require the attention of the archives librarian(s). When forwarding a query to the appropriate non-reference librarian, the personnel more often than not keep the patron uninformed of the referral. Moreover, the completion of transactions conducted outside of the reference personnel is hard to capture and evaluate, because they are not archived together with the rest of the reference transactions.

Recommendations

The online query submission form can create accurate perceptions in patrons as to how it will take for the librarians to respond to a query, if the form includes a message right before holidays and academic breaks, which informs patrons how long the library will be closed.

The process of documenting the e-mail reference service can be improved by requesting that all personnel copy their reference e-mails to the general service e-mail address, so that archives librarians' contributions to the service can be recognized. This is especially important if the e-mail reference transcripts are consulted for service and personnel assessment.

The promptness of the e-mail reference service can be improved through policy. A policy that requires librarians to inform patrons when they are forwarding queries to staff outside of the reference service will demonstrate to patrons that the query is being processed, rather than extending patrons' waiting time without any clarification.

The handling of queries by reference librarians can be improved through additional training. The areas that can benefit most include:

- training regarding the presentation of factual information to patrons that will decrease the number of instances when facts are cited without a reference to their source;
- training regarding instructional techniques, such as conceptual explanations, and how those can be enhanced by specific examples, especially in a context where most transactions consist of one question-answer interaction;
- training regarding the instructional value of describing what tools and materials the librarian has used to locate an answer and how those tools can be useful to the patron.

Appendix A: Master Code List

A. Transaction

1. Transcript number
2. Query day of week
3. Query day of semester
4. Query hour of the day
5. Query word count
6. Initial answer word count
7. Wait time for first response

B. Patron self-identification

1. Affiliated with Washburn University
 - 1.1. Student
 - 1.2. Distance education student
 - 1.3. Faculty/staff
 - 1.4. Alumni
2. Not affiliated with Washburn University
3. Not given

C. Query approachability characteristics

1. Greeting
2. Self-identification
3. Closure

D. Disciplinary area of query

1. Social sciences
2. Arts and humanities
3. Natural sciences
4. None or not clear

E. Type of Question

1. Non-reference
 - 1.1. Regarding reference services
 - 1.1.1. Technology problems
 - 1.1.2. Access/permissions (e.g. ILL)
 - 1.1.3. Other
 - 1.2. Regarding library units
 - 1.2.1. Library/service hours
 - 1.2.2. Library rules
 - 1.2.3. Library contact
 - 1.2.4. Other
2. Reference
 - 2.1. Fact
 - 2.1.1. Citation element
 - 2.1.2. Call number/ownership
 - 2.1.3. Other
 - 2.2. Finding
 - 2.2.1. Limited pool of information/citations

- 2.2.2. Ongoing research or large pool or open-ended query
- 2.2.3. Other
- 2.3. Teach
 - 2.3.1. Tactic – find a subject heading
 - 2.3.2. Tool – search a database
 - 2.3.3. Process – narrow a paper topic
 - 2.3.4. Other

F. Self-reported tools used by patron

1. Mabee library catalog
2. Bibliographic database
3. Mabee library website
4. Internet
5. None reported
6. Other

G. Patron-identified purpose for information

1. Not given
2. For educational purposes (homework, thesis)
3. For research of unspecified nature
4. For personal use (genealogy, hobby)
5. Application is given but purpose is not clear

H. Answer completion stage

1. Completed at time
2. Completed at time with a follow-up as an addition
3. Completed with referral as a follow-up
4. Started then completed by a follow-up
5. Started then completed by referral as a follow-up
6. Follow-up alone
7. Follow-up with referral
8. Referral alone

I. Answer approachability characteristics

1. Greeting
2. Welcome
3. Invitation
4. Closure
5. Self-identification

J. Tools used by librarian

1. Mabee library catalog
2. Bibliographic database
3. Mabee library website
4. Patron database
5. Internet
 - 5.1. Google
 - 5.2. Known websites
 - 5.3. Other
6. Not clear
7. Other

K. Facets of response from librarian (not mutually exclusive)

1. Functional
 - 1.1. Acknowledgement of query
 - 1.2. Request for more information
 - 1.3. Apology
 - 1.4. Refusal
2. Factual
 - 2.1. Specific information
 - 2.2. Source references
 - 2.3. Attached sources
3. Instructional
 - 3.1. Explanations
 - 3.2. Examples
 - 3.3. Strategy description
 - 3.4. Alternative options
 - 3.5. Step-by-step guide