Leading the Reference Renaissance

Today's Ideas for Tomorrow's Cutting-Edge Services

Edited by Marie L. Radford

Assessment—Using Data to Inform the Future

More Questions Than Answers: Using an Observational Study to Count Reference Activity

Susan Beatty and Claudette Cloutier

Overview

In an effort to determine the nature of the questions being asked at the many library service desks across the University of Calgary, in Alberta, Canada, an observational study of reference desk activity was conducted in fall 2008 and winter 2009. An observer recorded the number, type, and duration of the questions answered by a reference service provider at each service desk for four days per term during reference service hours. Based on the data analyzed after each set of observations, the vast majority of the librarian's time spent at the reference desk is spent on reference questions (more than 90 percent) with most reference conversations concluding in under 5 minutes (more than 90 percent). The branch libraries with integrated service desks, offering a combination of reference, technical support, and circulation, spent more time proportionately on non-reference activities. These results will be used to redesign the reference service models at the University of Calgary.

Introduction

Current trends in reference statistics in academic libraries are downward and have been for at least a decade (Kyrillidou, 2008). Librarians and administrators are querying the activity at reference desks and considering alternative service delivery models given this downward trend. In 2008, Libraries and Cultural Resources (LCR) at the University of Calgary, aware of the trend, struck a task group to determine the nature of the activity at the many reference service desks across the university. The task group conducted a reference desk observational study in fall 2008 and winter 2009. The study was conducted partly to inform the current understanding of reference desk activity and partly to inform decision making surrounding the planning for a new library, the Taylor Family

Digital Library, under construction in 2008 and due to open in 2011. The study's results were examined and compared by type of service model.

Some commonalities were uncovered and confirmed among the service units and models and, more interestingly, some differences were also found. This quantitative study does not illuminate the nature of the reference questions. It is not known if the complexity of the questions being asked at the reference desk has changed, or if there is a correlation between expertise and response time. The quality of the interactions was also not examined. Therefore, it is not known if the answers were correct, useful, or complete. This chapter will discuss the results of the survey, and the similarities and differences in the results, and speculate on possible considerations for future planning for academic library desk service.

The University of Calgary

The University of Calgary is a midsized research university with approximately 30,000 students and a full-time faculty of about 1,600. The University Library is a unit within LCR, which is constituted by the main library and four branch libraries (health sciences, business, law, and geoscience), Archives and Special Collections, The Nickle Arts Museum, The Military Museums, and the University Press.

In 2008, there were 13 reference service points in LCR. The desk in the main library, known as the Information Commons Service Desk, provides integrated reference and technical support services. Reference is provided seven days a week during fall and winter terms by librarians and paraprofessional staff, and technical support is provided by a combination of technical experts and student assistants. Reference service at all other points is offered five days a week by a similar mix of librarians and paraprofessionals, plus student assistants. While the staffing models are similar, the service delivery models are somewhat different according to the type of unit.

There were three types of service models in 2008. The Information Commons offered one-stop service where technical staff members provide technical support and reference staff members provide reference service. At the branches, three of the four locations had a reference desk separate from circulation delivery and one branch offered all services from one desk. Finally, the special service units, such as fine arts, visual resources, and special collections and archives, offered mixed services (circulation, reference/technology support, and collection mediation) from a single service desk. Prior to the observational survey, there was an awareness of the variety of staffing and service models throughout the organization, but no comparative data on the nature of service delivery was available.

Literature Review

Reference statistics have long been a measure of the level of activity in an academic library. Many academic libraries collect these statistics and submit them to various national reporting organizations that track the changing landscape. The data collected is intended to show the level of activity of reference services, which in turn is a measure of the significance of the service within the organization. Libraries use a variety of methods for gathering these statistics from sampling reference questions during specific times of the year, to keeping track of daily statistics, to hybrid models (Philips, 2005). The definitions that are used to define types of reference transactions also vary widely (De

Groote, Hitchcock, & McGowan, 2007; Henry & Neville, 2008; Meserve, Belanger, Bowlby, & Rosenblum, 2009; Ryan, 2008; Bracke et al.,2007; Warner, 2001). Most of these studies focus on the quantitative analysis of reference transactions; however, some models focus on qualitative analysis (Kuruppu, 2007; Mosely, 2007; Norlin, 2000).

In the past decade, a downward trend in reference statistics collected by academic libraries has been widely reported (Applegate, 2008; Banks & Pracht, 2008; Budd, 2009; De Groote et al., 2007; Kyrillidou, 2008; Philips, 2005). While there has been a drop in the number of reference questions asked at reference desks, it is suggested that this drop has been offset by a corresponding increase in the depth and difficulty of questions asked (Tenopir, 1998) and an increase in the number of participants in library instruction sessions (Kyrillidou, 2008). In 2008, the library at the University of Calgary needed to develop a better understanding of the types of questions being asked at the reference service desks to inform practice.

Methodology

In early 2008 the Reference Task Group, formed to administer a study about the collection of reference statistics within LCRs, was tasked with identifying a process leading to a better understanding of the nature of the services offered at the various reference service points in the University of Calgary libraries.

The task group focused on identifying the type of study to undertake. There were numerous discussions on how best to assess reference services given limited resources (time and staff) and which data collection methods should be used (Cullen & Gray, 1995; Halperin, 1974, 1978). The goal became to collect some data which would help in determining the nature of future staffing at service desks. Ultimately, the group focused on collecting data on the numbers and types of questions asked at 11 reference service desks and the time of day, duration, and frequency of these interactions. While the quantitative data could not be the sole determinant in planning for future service delivery, a benchmark was needed from which to work.

The group decided on a methodology that appeared deceptively simple. A form for data collection was created that would allow observers to collect data by hour of day and time taken to complete for the types of questions that we identified as being most frequently asked at the reference desk (see Figure 7.1, pp. 128–129).

For the purposes of the study, the following definitions for question types were used, as modified from De Groote and colleagues (2007):

- Directional: Questions regarding the location of services, policies, collections, and materials contained in the building or at the university.
- Reference: Questions that involve the use of one or more resources.
- Technology: Questions that concern the use of hardware (including audiovisual resources) and/or software applications. Examples include printing (troubleshooting, taking money for printing), general computer troubleshooting, use of MS Office products, uploading and transferring of files, audiovisual equipment and materials use, such as setting up users with a film, etc.
- Referral: Questions where the individual answering the question has referred the client to another person or service point. It may also include cases where the

Figure 7.1. Reference Question Sampling Form

Reference Question Sampling Form   Date: _____

(Circle one below.)
Sample Time Period (1 sheet per hour!): _____ AM PM

Please fill in back side of sheet also!

Name of Observer: _____
(Please indicate if self-observing.)

	< 5 min	6–15 min	16–30 min	31–60 min	> 60 min
Directional					
Reference					
Technology					
Referral					
Circulation					
Other					

Question Type Definitions

Directional: Questions regarding the location of services, policies, collections, and materials contained in the building or university.

Reference: Questions that involve the use of one or more resources.

Technology: Questions that concern the use of hardware (including AV resources) and/or software applications. Examples include: printing (troubleshooting, taking money for printing), general computer troubleshooting, use of MS Office Products, FTPing files, AV equipment and materials use (such as setting up users with a film, etc).

Referral: Questions where the individual answering the question has referred the client to another person or service point. It may also include cases where the person answering the initial question has called for a replacement at the desk and has moved off desk to answer the question in depth (moving the question into the realm of consultation).

Circulation: To be used at desks where circulation functions are also performed by staff on the desk.

Other: Questions that do not seem to fit any of the above categories.

Note: Questions may change during the course of a transaction. If the question changes from one category to another, each type of question will be indicated in the appropriate category along with the time spent in each category. For example, if a question is first recorded as a directional question and then becomes a reference question, it would be recorded first as a directional question then as a reference question. A reference question will be recorded as one question as long as the question is centered on one theme (subject/topic). If an additional question is asked that is on an entirely different topic, then this would be recorded as a new transaction.

(Continued)

Figure 7.1. Reference Question Sampling Form *(Continued)*

Reference Question Sampling Form

Date: _____

(Circle one below.)

Sample Time Period (1 sheet per hour!): _____ AM PM

Please fill in back side of sheet also!

Name of Observer: _____

(Please indicate if self-observing.)

Day of the Week	Month	Term	Service Location
☐ Monday	☐ January	☐ Summer	☐ Information Commons
☐ Tuesday	☐ February	☐ Fall	☐ IC Navigator
☐ Wednesday	☐ March	☐ Winter	☐ Health Sciences
☐ Thursday	☐ April	☐ Spring	☐ Business
☐ Friday	☐ May		☐ Gallagher
☐ Saturday	☐ June		☐ Law
☐ Sunday	☐ July		☐ Nickle Arts Museum
	☐ August		☐ Archives and Special
	☐ September		Collections and CAA
	☐ October		☐ Visual Resources Centre
	☐ November		☐ Fine Arts
	☐ December		☐ MADGIC

Notes:

person answering the initial question has called for a replacement at the desk and has moved off the desk to answer the question in-depth (moving the question into the realm of consultation).

- Circulation: To be used at integrated service desks where circulation activities are also performed by staff on the desk who answer reference questions. (This category was added for the winter 2009 observation.)
- Other: Questions that do not seem to fit any of the other categories.

Early on in the investigation it was recognized that the survey could not be generalizable given the variation in activity throughout the organization. While not statistically robust, the authors believed that this quantitative survey could still provide us with a snapshot of our existing situation and level of service (Kuruppu, 2007). A data collection schedule was developed based on the number of days each service point offered reference services (five or seven days per week). Four dates, from 16 representative sample days, during fall (September to December) 2008 and winter (January to April) 2009 terms were preselected for each service unit. The dates were selected to reflect known levels of activity during the beginning of term, reading week, midterm, and at the end of term. The survey would be conducted by a number of observers, each scheduled to observe for two hours at a time, on different days according to the pre-set schedule. Observation was one-on-one; while there may be more than one person on the desk, the observer would focus on the actions of a single person only. There was no attempt to get a complete measure of all activity, as this was deemed too onerous for an observer at a busy desk. The survey was manageable and doable with the available resources.

Once the data collection form and study methodology were finalized, the group set about recruiting volunteers. Individuals were not asked to self-record, as it is clear in the literature that this can lead to inaccuracy (Cullen & Gray, 1995; Warner, 2001). Recruiting volunteers from a limited number of staff to observe the reference service hours at the 11 desks was a challenge. Once volunteers were recruited, information sessions were held for staff and volunteers to enlighten them about the study and the process. It was important to inform staff of the goals of the study and to ensure them that service quality assessment was not one of the goals. It was also important to clarify to observers their ethical responsibilities regarding the study. For example, all observations were to be kept confidential. Observers should not make personal comments or discuss with others the interactions occurring at the desk. While this may seem obvious, it is important to clarify expectations for all, the observed as well as the observers.

Those observed would also include the people who would come to the desk for service, and it was important to ensure that these people were also aware that a survey was taking place. Signs were posted at each service desk with information that a survey was taking place. The purpose of the survey was described and it was emphasized that all information from observation was to be kept confidential. People were also offered the opportunity to refuse to be observed. Contact information was provided and it was also noted that the survey had been approved by the university's ethics board. No one refused to be observed and no one was contacted by participants for further information about the survey.

Although the data collection form was reviewed and tested at one location prior to implementation of the study, many requests were made for clarification on the process, as well as terminology, during the first round of data collection. For example, circulation was not originally included as a question type on the form, but it became apparent that reference staff at some of the reference service desks provided this function. As a result, the data collection form used during the fall observation period was updated for the winter observation period to include this question type.

Interest in volunteering to observe waned during the winter term. In the end, for the winter study it was necessary to ask some of the reference desk staff to self-observe. While maintaining neutrality, accuracy, and reliability became a possible problem in data collection, the study was completed. When fall and winter results were compared it was determined that the two sets were very consistent. The self-observation did not appear to have had a negative effect on data collection. It is possible that this result is so because participation in the study during the fall helped familiarize staff and observers with the parameters of data collection.

Finally, while it was known that the data would need to be tabulated, the authors had not grasped the amount of time that would be needed to both tabulate and chart the data. Fortunately, one of the service units was able to free up a staff member for data tabulation and analysis.

This reference study was the first to involve all of the reference units of LCR. The authors learned that a study of this magnitude has many facets. The study's design was successful in involving as many of the reference staff and service units as possible, in creating a common understanding of terminology, and in gathering data that reflected the unique and common activities throughout the organization. It was learned that pretesting, while integral to the development of the research process, can never be perfect, and that the important thing is to be flexible and manage the process so that the project is completed.

Data Analysis

While each location's data for fall and winter were tabulated separately, branch and special services data were also combined for each term to present an overview of activity by type of service. Each unit received its cumulated data on questions by weekday, by hour, by time of day, type of question by duration, and total questions by duration. Aggregated data for branches and the special services were also compared with data from the Information Commons reference service desk, giving a more complete view of activity across LCR by service type.

Figures 7.2, 7.3, and 7.4 show data from the winter study. The first observation is that the majority of questions (no matter the type or the location) are completed in less than five minutes. While great differences might have been expected between the service types in duration, in fact this was not found to be the case. The confirmation of the vast proportion of interactions being of short duration called into question the need for librarians to be on the desk. The research team wondered if short duration meant less complex questions.

The reference activity and time taken to complete the question was then looked at more closely. It was noted that in the Information Commons 73 percent of the reference

Figure 7.2. Branch Aggregate Data: Total Number of Questions by Duration, Winter 2009

- 0 - 5 mins
- 6 - 15 mins
- 16 - 30 mins
- 31 - 60 mins
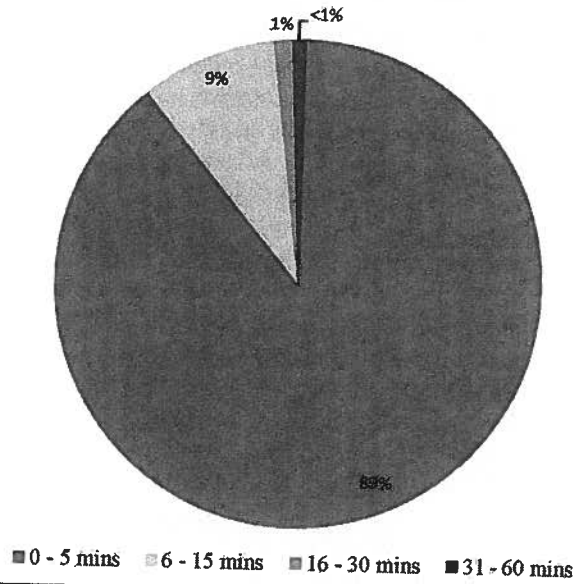
Figure 7.3. Special Services Aggregate Data: Total Number of Questions by Duration, Winter 2009

- 0 - 5 mins
- 6 - 15 mins
- 16 - 30 mins
- 31 - 60 mins
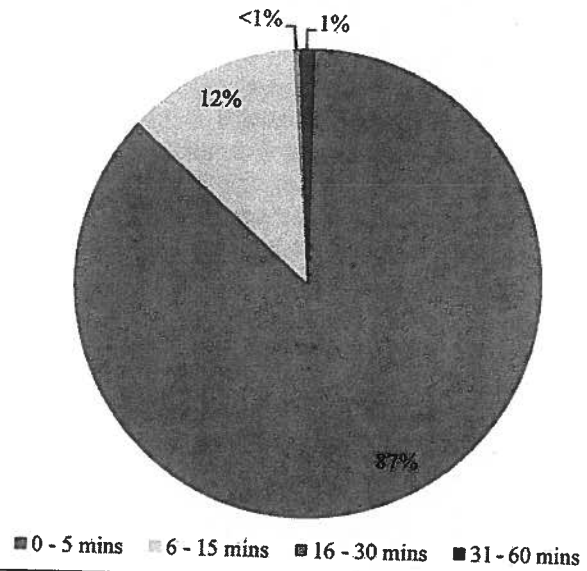
Figure 7.4. Information Commons Reference Desk: Total Number of Questions by Duration, Winter 2009

■ 0 - 5 mins   ▨ 6 - 15 mins   ▨ 16 - 30 mins
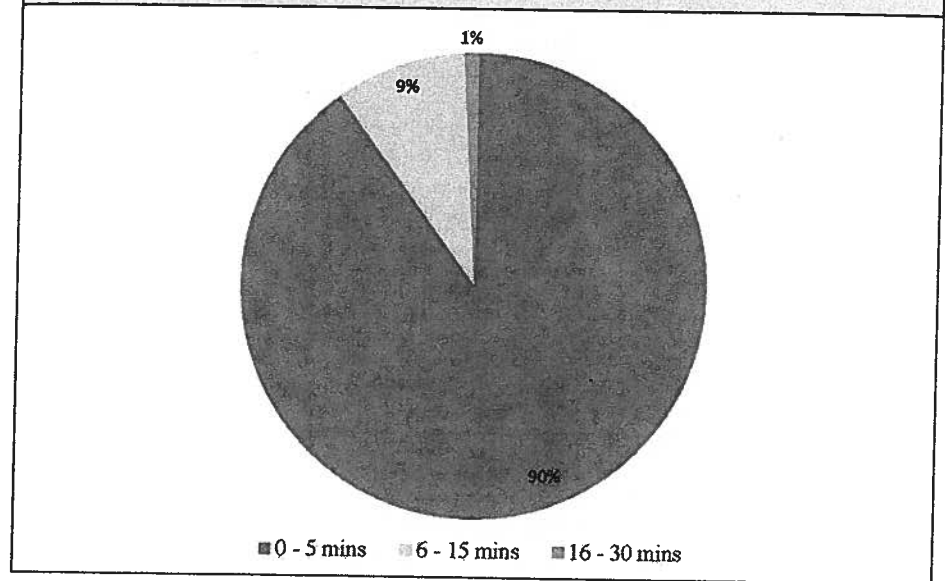
questions were completed in less than five minutes, while for the special services, 52 percent of the pure reference questions were completed in less than five minutes, and in the branches 67 percent were completed in less than five minutes. Other types of questions were overwhelmingly answered in less than five minutes. Further studies are needed to determine the factors related to amount of time taken to complete. It may be that more complex questions may be received at the special service and branch locations because of their more specialized collections and services. It could also be that with more time available more time is taken to answer questions. That is, the level of activity in a busy location versus a less busy location may determine the length of time of a reference interaction. Or, is the time taken to complete related to staff competency? What does this mean in terms of staffing and resources? These questions and more come to mind as changes in our service models are considered.

The researchers became curious about the patterns of activity that the data revealed. The comparative aggregate data for special services, branches, and the Information Commons showed three different patterns of activity, reflecting three different service models (see Figure 7.5).

When looking at the data for the Information Commons service desk, it appears as if staff time is taken up primarily in answering information-related questions (directional, reference, and referral) while technology support and circulation activity are less frequent. This finding makes sense, as the observation of the technology service staff was separated from that of the reference service staff. As the data were examined, through this separate observation, it was possible to get a view of activity of a "pure" reference service provider over time. This result was an unintended consequence, but in

Figure 7.5. Three Service Models: Total Number of Questions Asked by Type, Winter 2009
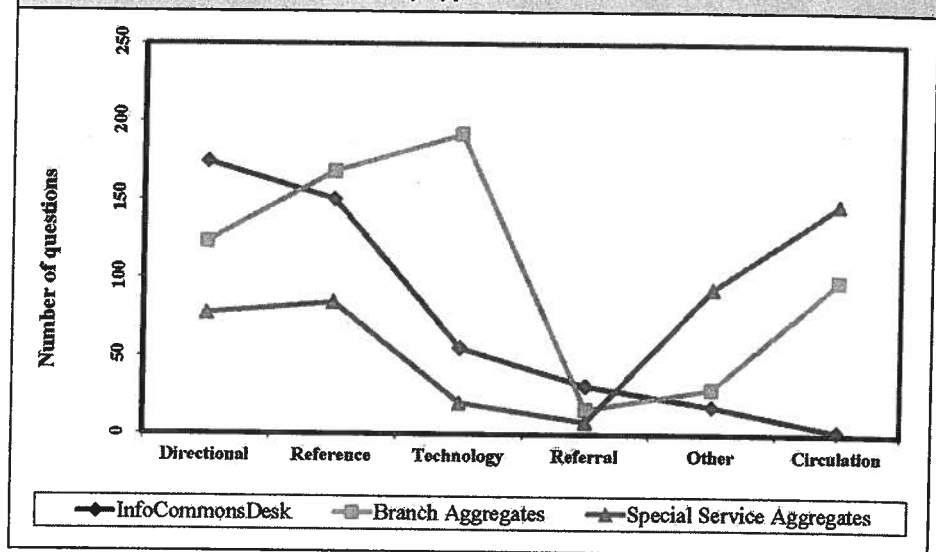
the end a very important one. The aggregate data from the specialized service desks revealed that the majority of desk activity is spent on circulation and other more unique activities, including the mediation of resources, setup of primary resource, or setup of audiovisual equipment and resources. Information-related activities tend to be less frequent at these service points. Finally, examination of the aggregate data from the library branches indicated that questions regarding other functions that come to the desk, including printing support and circulation, can take time away from the reference function that one would normally expect to see at a special library branch.

If one were to consider that the data reflect the nature of the activities of a single staff member on three different types of service desks, then one can begin to see how adding services results in the competition for staff time. This observation raises many issues for managers surrounding staffing levels, training, staff competencies, and level and quality of service outcomes. There is a movement toward more integration of service at a single service desk in academic libraries (Bracke et al., 2007; Bracke, Chinnaswamy, & Kline, 2008). While this model may make sense from many points of view, it is important for managers and administrators to consider how to meet the competing service demands at an integrated desk, and to develop the appropriate service model and staffing levels. Will a triage model work, with a handoff at point of contact to the technical expert or the media expert or the reference expert, for example? Or will there be an expectation of a wide range of competencies residing within each staff member so that any service request can be met at any time? What are the other alternatives, opportunities, and implications?

The University of Calgary is just beginning to examine these questions. One can see from the three data sets examined that each model has its implications when it comes to

the delivery of service. The representation of the nature of activity of these three models was an unexpected result of the survey. It leads to more questions related to the need to determine the quality of service and perhaps more specifically on the nature of the delivery of reference service as affected by service models.

Lessons Learned

This study was an ambitious undertaking. The goal to be inclusive and observe all types of service desks that provide reference was met. Reference was defined in its broadest sense and a wealth of information related to the types of questions and the nature of the activity at the reference desks was discovered. Desks in the main library and branches, special service desks, and primary service desks as well as the desk at The Nickle Arts Museum were observed. Through this study, the reference service staff across LCR was able to observe activities other than their own. It became as much a staff training opportunity as it did a research project, with staff becoming more aware of the broad range of activities within our organization. Prior to the study the definition of reference service varied across LCR, and after the study a common language and understanding surrounding reference activities was obtained. This will help in future planning and assessment.

By conducting the study with available staff it was possible to control costs. Staff time commitment was significant, however, and, as was discovered, commitments waned as time went on and other responsibilities took precedence. The researchers were able to be flexible and revise the study tabulation criteria and methods of data collection as the study went along, with little, if any, detrimental effect to the results. The initial testing could have improved using a larger variety of locations. The tabulation process could have also been improved by testing the tabulation and considering more carefully just what would be done with the data once collected. We were lucky to have someone on staff that could tabulate the data and create an analysis which met the research analysis needs, again with no cost except for staff time.

It is worthwhile to note that a project like this does need many hands. Project leaders and overseers are needed to keep track of the project, answer questions, ensure that everyone is on track, and keep in constant communication with all interested parties. This is no small task, and the amount of time needed can be surprising to those involved.

Where Do We Go from Here?

In the end, some baseline data has been collected about how much time it takes to answer questions and the variety of activities that occur at the reference service desks. The analysis leads to more questions. What were the questions at the desk? What is the difference between a question that takes less than five minutes to complete and one that takes more than five minutes to complete? Is there a correlation between staff competency and time taken to answer a question? If so, what are the competencies librarians should be aiming for as managers? There is much more to uncover.

Planning is currently underway to implement appropriate models for reference service delivery across a multifaceted information organization. Across LCR, reference is moving to more integrated, single-service desks, staffed by a mix of librarians and para-professionals. In the new Taylor Family Digital Library (TFDL), which opened in fall

2011, an additional step is being taken. Librarians have been moved off face-to-face desk service at the single-service desk. Using the data and conclusions from the study to inform its recommendations, a reference work group recommended that the new reference model for the single-service desk at TFDL replace librarians on the desk with librarians who are on call to provide reference service. Librarians will be situated near the desk, but not in a public area, and will be available to respond to complex reference questions. New reference service standards for all service points (including branch libraries) within LCR have also been recommended. As new delivery models are launched, it will be necessary to have appropriate tools for acquiring data and for assessing it. New tools and continued assessment will lead to a more interactive and integrated management of resources and service delivery.

Conclusion

The reference desk observation study was a first step to identifying more in-depth questions related to service delivery. Some assumptions and beliefs were confirmed, but the need to continue to investigate the reference service was also confirmed. What is the best service delivery model for reference? Likely there is no one model. However, as the move is made to integrated desk service it is clear that this model offers an excellent opportunity to examine the interrelationships of user needs and service management and delivery.

References

Applegate, R. (2008). Whose decline? Which academic libraries are "deserted" in terms of reference transactions? *Reference & User Services Quarterly, 48*(2), 176–189.

Banks, J., & Pracht, C. (2008). Reference desk staffing trends: A survey. *Reference & User Services Quarterly, 48*(1), 54–59.

Bracke, M. S, Brewer, M., Huff-Eibl, R., Lee, D. R., Mitchell, R., & Ray, M. (2007). Finding information in a new landscape: Developing new service and staffing models for mediated information services. *College & Research Letters, 68*(3), 248–267.

Bracke, M. S., Chinnaswamy, S., & Kline, E. (2008). Evolution of reference: A new service model for science and engineering libraries. *Issues in Science and Technology Librarianship, 53*(Winter). Retrieved on June 18, 2011, from http://www.istl.org/08-winter/refereed3.html.

Budd, J. M. (2009). Academic library data from the United States: An examination of trends. *LIBRES, 19*(2), 1–21.

Cullen, R., & Gray, A. (1995). A method for taking a reliable statistical sample of reference enquiries in a New Zealand public library system. *Journal of Library Administration, 22*(1), 113–123.

De Groote, S. L., Hitchcock, K., & McGowan, R. (2007). Trends in reference usage statistics in an academic health sciences library. *Journal of the Medical Library Association, 95*(1), 23–30.

Halperin, M. (1974). Reference question sampling. *RQ, 14*(1), 20–23.

Halperin, M. (1978). Cluster sampling reference transactions. *RQ, 17*(4), 328–333.

Henry, D. B., & Neville, T. M. (2008). Testing classification systems for reference questions. *Reference & User Services Quarterly, 47*(4), 364–373.

Kuruppu, P. U. (2007). Evaluation of reference services: A review. *The Journal of Academic Librarianship, 33*(3), 368–381.

Kyrillidou, M. (2008). Reshaping ARL statistics to capture the new environment. *ARL: A Bimonthly Report on Research Library Issues and Actions from ARL, CNI, and SPARC, 256*, 9–11.

Meserve, H. C., Belanger, S. E., Bowlby, J., & Rosenblum, L. (2009). Developing a model for reference research statistics—Applying the "Warner Model" of reference question classification to streamline research services. *Reference & User Services Quarterly, 48*(3), 247–258.

Mosely, P. A. (2007). Assessing user interactions at the desk nearest the front door. *Reference & User Services Quarterly, 47*(2), 159–167.

Norlin, E. (2000). Reference evaluation: A three-step approach—surveys, unobtrusive observations, and focus groups. *College & Research Libraries, 61*(6), 546–553.

Philips, S. M. (2005). The search for accuracy in reference desk statistics. *College & Junior College Libraries, 20*(3), 49–60.

Ryan, S. M. (2008). Reference transaction analysis: The cost-effectiveness of staffing a traditional academic reference desk. *The Journal of Academic Librarianship, 34*(5), 389–399.

Tenopir, C. (1998). Reference use statistics. *Library Journal, 123*(8), 32, 34.

Warner, D. G. (2001). A new classification for reference statistics. *Reference & User Services Quarterly, 41*(1), 51–55.