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DART: A Public Services Transaction Study

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Introduction

Physical space, staffing, and assessment have never been more important to academic libraries than they are in this current era. Space on campuses comes at a premium and libraries cannot easily expand their footprint to accommodate for more collections or study spaces for students. Pressed for additional study spaces, libraries are faced with the dilemma of creating it through the removal of print collections or the consolidation or elimination of public service desks. In addition, due to the recession in 2008, universities and their libraries have had to make tough decisions with respect to staff size either through layoffs or leaving positions unfilled. Libraries have been left doing more with less staff and that can be exacerbated if libraries are staffing multiple public service points throughout a library. Finally, assessment has traditionally been a tool to judge how a service or policy is received or used by a patron base but it has become increasingly important to rationalize collection decisions, justify staffing points, and spending.

From 2012 to 2014, the California Institute of Technology (Caltech) Library collected data on patron initiated transactions which occurred at each of the Library's public service points using the SpringShare LibAnalytics software platform. The subsequent analysis of collected data produced a self-identifying assessment technique centered on four specific areas: directional, access services, research, and technology or DART. Similar to the Reference Effort Assessment Data (READ) scale, the DART hierarchy identifies the level of expertise required to answer a patron question or fulfill a patron request. The implementation of the service was not without difficulties and learned lessons. The following will explain how

LibAnalytics was employed into the Caltech Library public service points, problems that arose, findings from the collected data, and finally, the planned next steps.

Literature Review

The debate on the physical reference desk, its role in the library, who staffs it, and what are the expectations from providing it as a physical service point has occurred for a half century. Samuel Rothstein (1964) observed that "the measurement and evaluation of reference services has been more often discussed than attempted" (p.456). A few decades later, Courtois and Goetsch (1984) examined the controversial "staffing of reference desks by non-professionals" (p.385). The measurement of questions at the reference desk seemed to be reduced down to unsophisticated tally of questions asked or answered. This practice yielded too little information to be useful and would be undoubtedly in correct (Rothstein, 1964). The skill level required to answer the types of questions received at a reference desk was also discussed. Rothstein (1964) identified these questions into four areas; "directional," "ready reference," "search," and "readers' advisory" (p.458). "Well-trained nonprofessionals are capable of answering many, if not, most patron queries" was a claim made by Courtois and Goetsch (1984) based on 67.5% of nonprofessional staff with at least bachelor's degree working at their library (p. 386-7). Incidentally, during the Caltech Library study, 80% off staff at both circulation desks held at least a bachelor's degree.

The idea of who should be the public face of the academic library when a user first enters can be a divisive topic especially between reference and access services staff. Both units are driven by a frontline public service that often relies on making a good first impression,

understanding the users' needs, and communicating to variety of clientele; from an 18-year-old freshman to an emeritus faculty. Two major factors that have affected how these two groups present the public face of the library are money and technology. The great recession of 2008 caused budget cuts to many universities and their libraries.

At the Library, these cuts resulted in layoffs and a collections budget reduction. In both cases, the library staff has not gone back to pre-2008 staffing levels and the collections' budget has remained relatively static with little to no increase, in the face of the regular annual subscription increases. Perhaps to combat this, Banks and Pracht (2009) found that many librarians found it more cost effective to use "non-MLS personnel" at reference desks so it they were freed up for other responsibilities (p.56). Their study found that the use of non-librarians was an essential part of the reference desk staffing practice in a larger number of academic libraries" and librarians found they could spend "more time on instruction" as well as "nontraditional types of reference like virtual reference and email reference" (Banks & Pracht, 2009, p.58-59). Garrison (2010) also recognized the numerous manners of contact between the reference librarian and user including the various locations where these interactions can take place. Where these exchanges take place and tell us a great deal about the type of assistance needed. For instance, Garrison's study found that "faculty, graduate students, and upper-level undergraduates" often sought research assistance in their liaison librarian's office Garrison, (p.208).

Dallas Long (2012) addressed the vital role of access services within a library and the overlooked teaching that can occur at the circulation desk. Long argued that the "circulation desk is the greatest point of contact for many patrons" and failing to provide a satisfactory

experience could dissuade to seek help from the circulation desk again (p.157). Chakraborty, English, and Payne (2013) documented how restructuring of an access service unit to better serve user needs presented challenges. A friction was discovered between reference and access services at the Blackwell Library due to their different working styles (Chakraborty, et al., 2013). To combat the lack of cooperation or mistrust between the two units, an emphasis was placed on improving communication channels and increase collaboration opportunities between librarians, most of the reference department and non-librarians from the access services unit (Chakraborty, et al., 2013).

Finally, the Reference Effort Assessment Data (READ) scale was studied as a model for how the Caltech Library's data would be collected and analyzed. Gerlich and Berard (2010) studied the practicability of the READ scale within an academic library environment. The authors noted that "reference transactions are on the decline…yet reference activities taking place beyond traditional service desks are on the rise (Gerlich and Berard, 2010, p.116). Their study, through the application of the READ scale for measuring patron interactions, provided a "way of revealing and counting important supplemental data that have been hidden in the customary tick marks used to record reference statistics (Gerlich and Berard, 2010, p.134)." After finding a large number of level 1 and 2 questions received at the reference desk, one institution, involved in their study, decided to not to require professional librarians staff their reference desk on weekday mornings or Saturdays (Gerlich and Berard, 2010).

The Caltech Library

The Caltech Library comprises of 6 libraries across the Caltech campus with the Sherman Fairchild Library (SFL) recognized as the central library in terms of print collections and services, with most course reserves, and circulating electronic devices, such as laptops, e-readers, and digital cameras located there. During the review period, the Millikan Library housed portions of print collections from a variety of subjects, the Library Administration offices, the interlibrary loan and document delivery operations, and the library privileges coordinator. The Dabney Humanities and Social Sciences), Geology, and Cahill (Astrophysics) Libraries retained specific subject related collections. SFL was open 24 hours/7 days a week to Caltech students, faculty, and staff. Millikan and Dabney libraries were open until 11pm to Caltech patrons, while Geology and Cahillclosed at 5pm.

Public service points at each location varied. At Geology, Cahill and Dabney libraries, the public service point was staffed by one person, either a senior library support associate or a subject librarian. If the individual was absent on a particular day, the service point was not staffed. Circulation of materials would occur either through a self-check machine (Dabney) or with a handwritten log. The Millikan Library had a circulation desk, while SFL had a circulation desk and a reference desk. The circulation desks at Millikan, SFL, and Dabney were staffed by full-time library staff from 8am until 5pm, Monday through Friday and by student staff after 5pm and all open hours during the weekends. The SFL reference desk was staffed by subject specialists 11am to 5pm, Monday through Friday. During the review period, public transactions were only entered by full-time library staff.

Like most libraries, the Caltech Library collected statistics in a variety of areas. In the public service area, much of the statistics collected were done through the automation of our

integrated library system, our room reservation software, or interlibrary loan software platform. This included data on checkouts, use of the group study room, number of interlibrary borrowing or lending requests, or course reserves. Data on use of electronic resource holdings was collected a variety of ways and could tell the Library about number of article downloads for a particular e-journal or the number of times patrons were turned away from a particular e-journal. These types of data only tell half of the story of a user's experience. Not all patrons, when entering a library, know exactly what resource they are looking for or understand how to navigate a library's physical or electronic environment to find answers. This was an unknown piece of our public service puzzle. Prior to September 2012, questions asked at the reference desk were recorded with a simple tick on a sheet under the day and hour. In this way, a question about how best to start conducting research on nuclear engineering could potentially be given the same weight as a question about where a course reserve might be found or how late the library was open if the particular librarian staffing the reference desk thought the question was worthy of noting on the reference question log. Questions were not recorded in any capacity at any of the circulation desks. This resulted in a significant gap of providing a complete and accurate assessment of what the Caltech Library users wanted or needed.

The Move to LibAnalytics

The implementation of LibAnalytics as a public service data collection tool began in the summer of 2012. In previous years, the reference desk at SFL was staffed by subject specialists during the summer though no classes took place and the student and faculty presence on campus was considerably lower compared to the academic year. The Head of Access and Fulfillment

Services proposed suspending a staffed reference desk during the 2012 summer to free subject specialists from the reference desk so they might engage their constituency outside of the Library. Also, offering a single public service point during a slow time like the summer period, gave the circulation staff an opportunity to expand their skillset and connect with patrons in a slightly different way. An on-call schedule was created for subject specialists and shared with the circulation staff in case questions required more subject expertise. During this summer period, full-time circulation staff were instructed to note every single patron initiated query that occurred at the SFL circulation desk. This would include the specifics of the question, the day, and the time. While patrons' questions may result in a book being checked out, staff were not to document instances when a patron may simply come to the circulation desk, book in hand, and only "ask" to check out the book.

While the single service point at SFL during the summer of 2012 worked well, the task of documenting and compiling the data collected at the circulation desk was found to be laborious. Staff would document the data regarding the question, the day, and time by hand in a log and then it was entered into a spreadsheet where the Head of Access and Fulfillment Services would analyze the entries. During a staff review of the findings and the workflow of data collection, LibAnalytics, a product from SpringShare, was suggested as a possible alternative to entering patron transactions. The Caltech Library had a prior relationship with SpringShare's LibGuides product. A subject specialist, who also served on the library's web management team, investigated LibAnalytics and found the Library would have free web form of the LibAnalytics available to the Library.

The LibAnalytic web form was created based on feedback from the subject specialists and the Head of Access and Fulfillment Services. The form included a drop down list to select who was entering the transaction, where and when the transaction was taking place, and the communication method of the question (e.g. in-person, email, phone, or other). There were open text fields for staff to enter the question and any additional notes. A widget was available for staff to quickly enter the day and time of the transaction. Radio buttons were present for staff to select whether the question was referred or if it was received from a referral. If questions were referred, a drop down list was present for staff to select to whom the question was referred.

Identifying the location of the transaction was considered just as important as the actual question that was being asked, since it would indicate where our patrons were seeking assistance. The options included each circulation desk at Millikan and SFL and the SFL reference desk. Because the Geology, Dabney, and Cahill Libraries each were staffed by one person, their locations were indicated in the web form just as "Geology," "Dabney," and "Cahill." Additional locations were included at the request of subject specialists who may encounter patrons outside of the reference desk. The "office" location was included for staff who found themselves answering questions received via email or telephone or by subject specialists who made appointments with patrons for research consultations. The "home" location was added for a similar reason as some staff answer email questions while at home. The "house call" location was added to indicate any public service transactions that took place by library staff visiting another location on campus. After an initial review of the data collection, additional locations were added to represent the Interlibrary Loan, Archives, and the Library Information

Technology departments. For the purposes of this review, those locations were not included in the analysis.

The choices for how a question was conveyed also evolved from the standard choices of "in-person," "email," and "phone." Instant message (IM) was included though not all subject specialists or Access and Fulfillment Services staff used it. If a question was received through email, staff had to indicate which email. For instance, the general library email (email address withheld) was an explicit choice in the LibAnalytics web form but if an email came directly to a specific subject specialist, he or she would indicate with just the "email" choice.

One option that was included in the initial web form was a field that asked staff to check yes or no if the patron's question was in regards to a print journal. Originally, this was included in hopes it would provide data on the usage of print journals. The field was used so infrequently, it was removed and was not included in this analysis.

Once the LibAnalytic web form was finalized, it was introduced to subject specialists and Access and Fulfillment Services staff. Individuals' names from these two units were included into the drop-down menu. Initial training included demonstrating to staff how to use the form, as well as what type of interactions to include in the form and what not to include. The launch date was announced as October 1, 2012 as it was the official start of the fall academic term at Caltech. Similarly, to the logging of questions over the summer at the SFL circulation desk, staff were encouraged to enter any question initiated by a patron. It was expressed to staff, when in doubt, to provide as much information as possible. The data would be reviewed by the Head of Access and Fulfillment Services and if any patron transactions did not fit the goal of what was to be measured, staff would be notified to avoid entering those types of transactions.

After the fall academic term, the data collected from only the SFL reference desk location was exported from LibAnalytics to a Microsoft Excel spreadsheet. The Head of Access and Fulfillment Services analyzed each entry and labeled each one based on the type of question entered. For the review of the first academic term, the categories included access, research, technology, library administration, archives, directional, and non-library related.

The rationale behind these categories centered on a two-fold concept: did the question focus on a specific service or resource found in a particular library department and what level of staff would be knowledgeable enough to answer the question. For example, a question about how to find a book on course reserves would be labeled as "access" since course reserves was a service within the Access and Fulfillment Services unit and the knowledge to answer this question could be answered by an Access and Fulfillment Services staff member.   A question about what best possible resources to use to begin researching thermonuclear engineering would be labeled "research" because it involves locating resources within the 'Research and Instructional Services' realm and requires expertise to find such information resources. The Caltech Collection of Open Digital Archives (CODA) serves as the institutional repository for Caltech and provides access to faculty research publications and other Caltech related content. Questions regarding how to access material from CODA or how to deposit publications, particularly student theses, are often received by library staff. Though these questions may not require specific subject knowledge, they do require staff with research skills and a strong understanding of how CODA works. For these reasons, questions related to CODA were labeled as "research."

A conscious decision was made by the Head of Access and Fulfillment Services to use the term "research" over the typically used "reference" term for a few reasons. The primary reason centered on relating the question/request to the staffing and expertise needed to answer the question or fulfill the request. The 'Research and Instructional Services' was comprised of the subject specialist librarians who staffed a majority of hours at the SFL reference desk so just as transactions labeled as "access" related the Access and Fulfillment Services, transactions related to the Research and Instructional Services unit would have a term that directly connected to them. The other reason to use the "research" over the more traditional "reference" was to move away from what the Reference and User Services Association (RUSA) and Association of Research Libraries' (ARL) define as a reference transaction. In the author's opinion, the user-librarian relationship has evolved from librarians simply including "recommendations, interpretation, or instruction in the use of one or more information sources (Definitions of Reference, 2008)" into a more interconnected relationship where assistance is needed in not just navigating the ocean of information resources but support or consulting with copyright, authorship, and data management.

In many instances, a balance was needed between weighing those two criteria and determining what would be the best label to use for a particular question. For example, if a question was about how to find a specific reference book, it was labeled as 'access' because, while the request was about finding a book, possibly for research, it was a known title and the skill level to satisfy this question could be done by staff from the Access and Fulfillment Services unit. If a student came to the reference desk and asked where the scanners were and how one would scan, it was not labeled "technology" but rather "access" because all Access and

Fulfillment Services staff are trained on how to use library scanners. However, if the question, "I need help; this scanner is not working," the query would be identified as "technology" because the subject of the question was related to hardware or software and required knowledge on how to correctly troubleshoot and resolve the problem. The research category was also expanded to not only include questions requiring research assistance or subject expertise but also to include questions about the Library's institutional repository, journal subscriptions, or problems with access to electronic holdings.

A chart was later created to address these categories, examples in each, the staff skill level required to answer the question, and a READ scale comparison (Appendix 1). The inclusion of READ scale provides context but only in a limited sense as a "5" in the READ scale would not automatically be labeled as "Research" in the DART hierarchy. According to the READ scale, questions that may require "consultation appointments with individuals could be rated as a "5" on the READ scale (READ Scale Bulleted Format, n.d.). A question about copyright or fair use related to course reserves could require an appointment with the Head of Access and Fulfillment Services for further assistance. If a problem comes to a public service point that involves interlibrary loan, it could be considered a "4" on the READ scale; "services outside of reference become utilized (ILL, Tech services, etc), collegial consultation (READ Scale Bulleted Format, n.d.)." Finally, a technology question could vary between a simple "1" on the READ scale or as much as a "6" if it requires Library Information Technology staff to dedicate a substantial amount of time and resources towards a solution. Essentially, the major difference between READ and DART is that READ was created to assist reference librarians in assessing

reference questions (READ Scale Bulleted Format, n.d.). DART attempts to address all questions

received at any public service point, regardless of who may staff the service point.

As analysis continued beyond the initial fall academic term, the categories evolved.

Questions about the Library's archives or special collections or requiring our archivist were

shifted to the "research category" instead of just "Archives." The "directional" category

focused on non-library but campus questions like "could you tell me where the campus

bookstore is?" Questions that related to directional within the library were shifted to the

access category because they involved library services, facilities, or collections. The "library

administration" category was used but there were very few questions that fell into this

category from term to term and generally measured less than one percent of the questions

received.

In order to assure that the categories and the reasoning and the assigning of these

categories to collected questions was appropriate, after the Head of Access and Fulfillment

Services tagged each transaction entered at the reference desk during the fall academic term, a

Microsoft Excel spreadsheet was shared with the Research and Instructional Services unit

where a subject specialist reviewed the entries and the category assigned to each transaction.

The classification was accepted and the Head of Access and Fulfillment Services continued

exporting transaction data from the other public service point locations and analyzing based on

this developed criteria.

Patron initiated questions were collected and entered into LibAnalytics for the public

service points at the Caltech Library locations for the full 2012-13 academic year. Classes are

not held during the summer at Caltech and therefore, the data collected was not included in

the report. Once compiled, the findings and analysis were shared with the library staff. The Library decided to continue collecting the data in the 2013-14 academic year so further analysis could be conducted. In addition, it was recommended that staff were reminded often to report transactions, be as specific as possible, and indicate if the question was being referred or was received from a referral. While staff could explicitly note if a question was referred and to whom, it was not always apparent if a question was being received from a referral. For this reason, it was highly unlikely the number of questions referral and questions received from referrals would be equal.

Following this initial year of analysis, the Head of Access and Fulfillment Services met with the Research and Instructional Services unit to discuss additional changes that should occur during the 2013-14 academic year collection period. This included adding the "house call" location into the analysis. It was an option on the web form but the data was not expressed in the initial report. Subject specialists expressed that questions or conversations can occur away from the reference desk, home, and office and it was important to see the frequency of such visits. The Head of Access and Fulfillment Services also requested that subject specialists be more detailed in their entries. During the fall and winter terms, the term "fc" or "fac conv" appeared several times. Both were short for "faculty conversation." Without a specific topic on these conversations, it was not possible to assign these to a category. The conversations could have ranged from placing books on course reserve to accessing a library after hours to collection development within a particular subject. With the Dabney, Cahill, and Geology libraries each only staffed by one library staff, the lone individual was bound to receive a variety of questions on a cross-section of services or resources offered by the Library.

The use of LibAnalytics continued for the 2013-14 academic year and a similar report was authored by the Head of Access and Fulfillment Services. This report was shared only with department heads as the Caltech Library was going through a change of leadership with the retirement of the University Librarian and the hiring of a new University Librarian.

The Findings

The data collected and analyzed was collected from October 1, 2012 to June 14, 2013 and September 30, 2013 to June 13, 2014 while classes were in session on the Caltech campus. For the SFL reference desk, Millikan and SFL circulation desks, Geology Library, Cahill Library, Dabney Library, home, office, and house calls locations, the statistics were as follows:

- 15,943 patron-initiated transactions recorded

- 70% of these instances occurred in-person between patrons and library staff

- 19% of these instances occurred through email between patrons and library staff

- 11% of these instances occurred by phone between patrons and library staff

- 69% were considered access-related

- 23% were considered research-related

- 3% were considered directional or non-library related

- 3% were considered technology related

- The remaining 2% of patron transactions fell outside of the four primary categories and included questions regarding library administration, cataloging, or could not be determined.

- 11% of all exchanges were referred to either other library staff or another campus department

A quick snapshot of this overall analysis indicated that the Caltech campus community still relies on face-to-face interactions with the Caltech Library staff and that a strong majority of those exchanges are related to services provided by the Access and Fulfillment Services unit. In addition, the extremely low rate of referrals could indicate either library staff who provide some form of public service are well trained in multiple areas or patrons understand who exactly to go to for assistance.

As indicated in the literature review, the reference desk is often the site of where most assessments on public service needs are performed. The reference desk was once a core pillar of the physical library but some academic libraries are shifting away from and moving towards consultation spaces, on-call subject librarians, and one-stop service desk (Banks and Pracht, 2009). The SFL reference desk was staffed almost entirely by the Research and Instructional Services unit of the Caltech Library, though the Head of Access and Fulfillment did staff it once a week for a two hour shift. The Research and Instructional unit consisted of six subject specialists who provide research assistance, instruction, liaison support, and are responsible for collection development.

The data collected at the reference desk is similar to the overall data collected at all locations (Table 1). Access related questions are the majority though the proportion of questions requiring research assistance was greater at the reference desk. This makes sense since the reference desk has signage indicated it is for reference and looks like a typical

reference desk though the proportion of research related questions is still less than a third of questions.

[Table 1. Questions Received at the Reference Desk by Type]

Though it visually indicates itself as a desk for reference or research assistance, the desk is approximately 15 feet away from the circulation desk in Shiller Fairfax Library and is directly in the line of sight for those who enter the library. The statistics suggest Caltech Library patrons view this as a welcome desk or single service point desk to ask any library related question due to its convenient location. The communication methods of questions received at the reference desk were similar to the overall data collected (Table 2). However, it should be noted that the numbers collected for emails include emails received to the general email address which is generally watched by those staffing the reference desk as well as emails sent directly to specific subject specialists who happen to answer these emails while staffing the reference desk.

[Table 2. Communication Method of Questions Received at the Reference Desk]

Since questions received by phone or through email do not necessarily need to be answered by someone at the reference desk, further analysis was done to examine only question or exchanges that occurred in-person between a patron and Caltech Library staff at the reference desk (Table 3). This showed a proportional drop in research related questions and rises to access services and technology related questions.

[Table 3. Questions Received in-person at the Reference Desk by Type]

The reference desk was staffed Monday through Friday from 11 a.m. to 5 p.m. during the two academic years. This equated to 337 days and 6 hours per day. Over the 2,022 hours at the reference desk, an in-person question was received every 51 minutes. An in-person question requiring research assistance occurred every 277 minutes.   Because other work can be brought to the reference desk, subject specialists have indicated, even with long time periods between questions, productivity is not impacted by staffing the reference desk. Approximately 18% of all questions received at the reference desk were referred to either another library unit or another subject specialist.

It was not surprising that the two circulation desks received the most activity in the study. Both are located nearest to entrances to their respective libraries and serve as a pick up point for interlibrary loans, holds, circulating electronic devices, and course reserves.   Just as the reference desk serves as the front door to the Research and Instructional Services unit, the circulation desks provide a gateway to the services provided by the Access and Fulfillment Services unit. During the 2012-14 review period, Access and Fulfillment Services was the largest unit in the Library with one department head, eleven full-time staff, 2 part-time staff, and as many as forty student staff. The Access and Fulfillment Services includes circulation, course reserves, interlibrary loan, document delivery, and collection maintenance and the data indicates the vast majority of questions were related to those areas (Table 4).

[Table 4. Questions Received at the Circulation Desks by Type]

Person to person contact was extremely high at both circulation desks and proportionally was the highest of any public service location (Table 5). Email contact was usually attributed to patrons replying to an automated library notice regarding an overdue or recalled book. During the study period, the phone number publicized on the library website was the reference desk not either of the circulation desks.

[Table 5. Communication Method of Questions Received at the Circulation Desks]

Branch or subject libraries play an important role on the Caltech campus. The Dabney, Cahill, and Geology Libraries and their staff were embedded within the academic departments they support. This provided an opportunity for daily interaction between library staff and their core constituents. A subject specialist was located in each of the Dabney and Cahill Libraries, while a senior library staff member was located in the Geology Library. Because each library was staffed by one individual, consistent staffing was reliant on just that person and was not staffed if the individual has a scheduled or unscheduled absence.

With one person responsible for staffing each of these libraries, each staff member becomes a one-stop shop for all library services and often serves as a single hybrid reference and circulation point. This is represented by the closer split between access and research related questions (Table 6). There were 239 entries from the Dabney Library entered into LibAnalytics as "fc" or "fac conv." Both were abbreviations for "faculty conversation." Because

the conversations were between a subject specialist and faculty member, benefit of the doubt was given the ""research" category, though there is a possibility that some of these questions could have been about interlibrary loan or course reserves which would fall into the access sphere. The communication choice for the branch libraries favored face to face contact (Table 7) and was proportionally similar to the reference desk except for phone versus email contact. Only 11% of all questions received were referred to other library staff. Library staff indicated this was likely due to the familiarity between the individual library staff and their departmental patrons.

[Table 6. Questions by type for the Geology, Cahill, and Dabney Libraries]

[Table 7. Communication Method of Questions Received at the Geology, Cahill, and Dabney Libraries]

Data was collected beyond these non-traditional public service points and included staff offices, home, and house calls. The "home" location was defined as questions received while away from campus and were all received through email. Questions received through email could have been addressed to the general library email address (email address withheld), a departmental library email address (email address withheld) or individual staff email address. Because the general and departmental email addresses were monitored while staff were away from the Library, they received the highest proportion of referrals (32%) of any location.

All "house call" interactions took place in person and involved a subject specialist visiting a patron's office to provide research assistance. With all house call entries made by subject specialists, it made sense that the emphasis was on research related assistance. For these non-traditional locations, research related questions were received at the highest frequency (Table 8).

[Table 8. Questions by type for the Office, Home, and House Call locations]

Conclusion and Broader implications

One issue based on the data collected and subsequent analysis is whether the traditional reference desk, which, in part, is purely reliant on walk-ins to impart its value, could now be considered a boutique library service similar to information technology (IT) desks found in some libraries. The use of the reference desk and the physical space it occupies on a library floor relies on patrons with specific research needs rather than the more straightforward questions which access services staff can address. For these cases, the reference desk serves its purpose but for those questions that may require a detailed discussion or even future consultations, the level and variety of research assistance needed may require separate, by appointment, meetings or even private consultation spaces. This would be similar to students who may bring their laptop into an information technology desk either for repairs or assistance in using a particular software application.

In both cases, as evident in the data collected, the need for in-person extensive assistance occurs at a lower rate in the main library and a well-trained access services staff is

able to address the vast majority of in-person patron-initiated transactions. With academic

libraries pressed for space, perhaps, data collection on patron-initiated queries would

encourage libraries to remove the reference desk and move towards increased training for

access services staff and an on-call referral system for subject specialists. In doing so, the time

away from a reference desk could provide subject specialists with the opportunity to create

librarian-initiated contact with patrons as well as offer instructional sessions outside the library.

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Tables

Table 1. Questions Received at the Reference Desk by Type

Type of question/exchange	Number of questions/exchanges	Percentage of question/exchange type
Access	1980	57%
Research	967	29%
Technology	318	9%
Directional	117	3%
Other Library Related (administration or cataloging)	60	1%
Undetermined	24	<1%

Table 2. Communication Method of Questions Received at the Reference Desk

Communication Method	Number of questions/exchanges	Percentage of questions/exchanges
In-Person	2373	68%
Phone	596	17%
Email (personal or general)	497	14%

Table 3. Questions Received in-person at the Reference Desk by Type

Type of question/exchange	Number of questions/exchanges	Percentage of question/exchange type
Access	1519	64%
Research	437	18%
Technology	292	12%
Directional	94	4%
Other Library Related (administration or cataloging)	19	1%
Undetermined	12	1%

Table 4. Questions Received at the Circulation Desks by Type

Type of question/exchange	Number of questions/exchanges	Percentage of question/exchange type
Access	7581	93%
Research	129	2%
Technology	89	1%
Directional	295	4%
Other Library Related (administration or cataloging)	27	<1%

Table 5. Communication Method of Questions Received at the Circulation Desks

Communication Method	Number of questions/exchanges	Percentage of questions/exchanges
In Person	6914	85%
Phone	782	10%
Email (personal or general)	425	5%

Table 6. Questions by type for the Geology, Cahill, and Dabney Libraries

Type of question/exchange	Number of questions/exchanges	Percentage of question/exchange type
Access	938	40%
Research	1226	52%
Technology	74	3%
Directional	112	5%

Table 7. Communication Method of Questions Received at the Geology, Cahill, and Dabney Libraries

Communication Method	Number of questions/exchanges	Percentage of questions/exchanges
In Person	1585	67%
Phone	153	7%
Email (personal or general)	612	26%

Table 8. Questions by type for the Office, Home, and House Call locations

Type of question/exchange	Number of questions/exchanges	Percentage of question/exchange type
Access	422	22%
Research	1455	76%
Technology	15	1%
Directional	6	0%
Library Administration	8	0%