Practical library research: a tool for effective library management

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Librarians are being urged to conduct research as one of their professional responsibilities. Many librarians, however, avoid research, because they believe it is beyond their capabilities or resources. This paper discusses the importance of conducting applied research—research directed toward solving practical problems. The paper describes how one library conducted practical research projects, including use studies and surveys, over an eighteen-year period. These projects produced objective data that were used by the library to make management decisions that benefited both the library and its parent institution. This paper encourages other librarians to conduct practical research projects and to share the results with their colleagues through publication in the professional literature.

INTRODUCTION

For more than a decade, the Medical Library Association (MLA) has encouraged its members to conduct research and to view it as a critical component of health sciences librarianship. In 1979, MLA President Erika Love called research “the third dimension of librarianship,” with library education and practice being the other two [1]. More recently, MLA has published two documents that emphasize the importance of research to the profession: Shaping the Future: The Strategic Plan of the Medical Library Association [2] and Platform for Change: The Educational Policy Statement of the Medical Library Association [3]. In her 1992 inaugural address, MLA President Jacqueline Bastille urged the membership to take basic responsibility for this critical role [4].

Hospital librarians have been slow to respond to this call, frequently citing a lack of support for research efforts [5–6]. One way to prove the value of research to often-skeptical administrators is to use research in analyzing operations and making practical decisions. If research has direct practical application to the institution, greater institutional support may result [7]. MLA’s strategic plan embraces applied research—research directed toward solving practical problems [8]. Applied research can be performed by all librarians, because it seldom requires special skills or resources. When it does, librarians should seek expertise or other resources from within their institutions or from outside if necessary.

This paper describes how the Treadwell Library staff of the Massachusetts General Hospital (MGH) systematically has collected objective data through practical research projects and used that data to make numerous management decisions over the last eighteen years. These decisions have involved allocation of scarce resources, specifically space and funds, which clearly have direct practical use to the institution. This research was not conducted as an isolated function but rather as part of practical librarianship.

BACKGROUND

The MGH is the major teaching hospital for the Harvard Medical School. There are more than 2,000 medical staff members and more than 1,600 students, including medical students, house officers, fellows,
nursing students, and other professional and para-
professional trainees. Research is a major component
of the hospital's activities, with more than $100 mil-
lion in federal funds granted each year.

Despite the large size and complexity of this user
population, the Treadwell Library is funded as a hos-
pital library and thus faces the typical hospital library
problems of space and funding shortages. Treadwell
has a staff of nineteen, including nine librarians. The
collection contains 55,000 volumes and 900 active
journal subscriptions.

In the mid-1970s, the library's journal collection
literally overflowed to the floor. Two actions were
taken when a new library director was hired. The
MGH chiefs of service were asked to suggest journal
titles in their specialties that could be eliminated.
Next, following standard library practice, a decision
was made to place in storage all journal volumes pub-
lished before 1955, and a recent library school gradu-
ate was hired on a temporary part-time basis to man-
age this project. However, even before the project was
completed, demand soared for parts of some journals
that already had been moved to storage. The use of
a uniform cut-off date for journal runs obviously re-
sulted in poor service to users.

Seeking a better way to make such decisions that
would improve service to users while accommodating
operational constraints, the Treadwell staff consulted
literature in quantitative measurement and systems
analysis [9-10]. In 1976, a research projects proposal
was written, defining the library's goal of conducting
intensive studies of the collection and user needs to
help solve library management problems. Consider-
ing the large amount of objective data routinely col-
lected, such as interlibrary loan (ILL) and circulation
statistics, and the possibility of collecting data in myr-
riad other ways, it seemed reasonable to conduct col-
lection and user needs studies as part of routine li-
brary management. A few months later, Treadwell Lib-
rary embarked on the first of numerous research
projects.

COLLECTION USE STUDIES

1977 journal use study

The library's inaugural research project was a year-
long (1977) quantitative use study of the journal col-
lection. The study attempted to determine the appro-
 priate content for a dynamic journal collection that
would respond to user needs as well as space and
dollar constraints. The details of this study have been
published and will not be discussed here [11].

As the project evolved, it became clear that external
resources would be needed. The MGH research di-
vision funded a grant that helped defray some of the
costs, including the salary of the temporary librarian.
Consequently, the library director not only complet-
ed the project but also justified a new position for a
coordinator of library research projects, and the tem-
porary librarian position became permanent. This was
an unexpected yet invaluable product of this first
research project, serving as testimony to the words
of Fenske and Dalrymple: "If the results of research
can be shown to be of direct practical use to the in-
stitution, greater institutional support may result" [12].

The results of this study also revealed the short-
comings of the early decisions to rely on subjective
recommendations for journal cuts and to place all pre-
1955 journal volumes in storage. Demand was high
for journal issues that remained in the library after
subscriptions for these titles were dropped, as well
as for many older journal volumes that were put in
storage [13]. Relying on the use data, librarians moved
journal issues in or out of storage, dropped titles, and
reinstated other titles that had been dropped based
on the chiefs' survey. These decisions freed funds and
shelf space for subscriptions to new titles.

Precise linear measurements for each journal title,
obtained during the study, later played a critical role
in planning for a move to a new building. Because
these measurements allowed for exact shelf planning,
the move was completed in just two days.

These experiences convinced library administra-
tion that use studies were important for the manage-
ment of the library and that another one should be
done in the near future. The library staff looked for-
ward to the day when technology would enable the
 collection of this information as a daily routine.


In 1981, the library replicated the 1977 use study and
used the resulting data to make journal storage and
retention decisions, including the painful decisions
required to cut the journal budget by 20% in 1985.
Then, to update the 1981 use data, the library staff
conducted a six-month use study of the journal and

The latter was a simpler study to update journal
use data until the information could be collected on
an ongoing basis. This was the first time book use
was measured. Low-use books were weeded out,
opening up badly needed space, and an inventory
was completed, facilitating the later implementation
of an integrated library system (ILS). The data from
this use study also were used in 1990, when the li-
brary was enlarged and the storage collection was
thinned and then integrated into the library collec-
tion.

Ongoing journal use data collection

Although conducting these use studies certainly was
time-consuming, there was no question that the ben-
efits outweighed the costs. The studies yielded ob-

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jective data that were used, sometimes repeatedly, in making critical decisions about the collection and the allocation of resources for it. Now, thanks to ILS technology, the Treadwell Library staff is doing what was only a dream eighteen years ago—monitoring daily use of the book and journal collections. All books and journals are scanned with a bar-code reader before being shelved, and this data later is transferred to the ILS for manipulation.

In 1993, one year of use data for the most recent five years’ worth of all journal titles was analyzed, and a report was generated, listing titles with fewer than twenty uses. This cut-off point was chosen partially because the total cost of subscriptions for these low-use journals equaled the required reduction in the journal budget. But this cut-off also was chosen because the 1977 use study showed that journal runs with eleven or more uses met 95% of user demand, while journal runs with at least thirty-six uses satisfied 90% of user demand [14-15]. Because use of the 90% standard (thirty-six uses) could result in considerable hardship for users, a cut-off point of twenty uses was chosen as an arbitrary compromise.

To make sure other factors not easily measured were considered, the library administration consulted Library Committee members for recommendations on what constitutes reasonable use when making journal retention decisions. Discussions addressed such problems as the needs of small departments and of scientists working in unusual or highly specialized fields. To aid in decision making, data also were presented on ILL demand for journals not owned and on use of some titles purchased in the past on the basis of ILL demand. Commercial services that provide document delivery within forty-eight hours also were discussed, because use of such services to provide articles from seldom-used journals may be more cost-effective than maintaining subscriptions for these journals.

Based on objective data presented, the subjective issue of equity for small specialties, and the need to reduce the budget deficit, the Library Committee reached a consensus: titles used five times or fewer in a year should be dropped, and those used between six and nineteen times also should be dropped, unless a department agreed to pay the subscription fee. The committee’s advice was followed: of 171 titles identified for deselection, only two were retained and charged to a department.

SURVEYS

Survey of department libraries

Well-designed surveys can produce useful information for library management. In 1976, the Treadwell Library conducted a survey of the holdings of department libraries to help determine whether a feasible method of resource sharing could be developed. The research projects librarian surveyed twenty-seven department libraries, generating an inventory of journals held by departments willing to lend to the library and to allow the use of their collections by persons from other departments.

For one year, the library staff consulted this inventory when filling ILL requests for users. This experiment showed that department libraries could not be relied on to provide resources for the MGH community. Problems included considerable journal duplication, minimal control, and lack of commitment to sharing. As a result, a decision was made not to spend any more resources trying to improve access to department collections. The time and effort devoted to this study have paid off many times over, because, periodically, the library is advised to use department collections to leverage its resources. Librarians answer these friendly suggestions quickly by citing this study and the reasons why the effort failed.

Annual users survey

The first survey was followed by several other surveys, including an annual survey of users as they walk in the door or telephone the library. This annual survey evolved out of discussions held in 1978 with the MGH controller on increasing the library’s budget to cover costly resources for research. This administrator suggested that a study be conducted to collect data on library users that might justify an increase in the indirect cost allocation for MGH research grants funded by the National Institutes of Health and, therefore, justify increasing the library’s budget for research.

In the first year, three surveys of one week each were conducted at different times of the year. However, because there was not a statistically significant difference (using analysis of variance) among the numbers of user visits recorded during each survey, library administrators decided that a one-week sample during any time of the year would be sufficient. Since then, surveys have been conducted each year on every day of the week selected randomly over a one-month period.

Results of the first survey did not change the library allocation from the research indirect-cost pool. The controller, nevertheless, encouraged the library to conduct the survey annually because the fiscal affairs department found the information very useful for its financial analyses and for reports. The data also were used to justify new space to accommodate a growing user population. The library administration then decided to conduct the survey annually.

The survey data yield a profile of the library’s users, including their department affiliations, job titles, and
the main purpose of their visits (e.g., patient care, research, or teaching). Data also are collected on service provided in person and by telephone at three service points: the circulation desk, the reference desk, and a mediated-search center. The data gathered have been used in many ways: to prove that use of the library or its services is increasing, to justify staffing levels, to determine library hours, and to measure the percentage of users of different types. The user-type data have been used by MGH financial analysts to justify increased contributions to the library’s budget from certain divisions or groups.

Surveying every visitor for seven whole days spread out over a month is time- and staff-intensive and a bit annoying to some users. But the interview takes less than a minute to complete, and candy proffered as a reward is accepted cheerfully by most respondents. The data collected are so rich and useful that the library staff persists in collecting them this way and, in doing so, reaps the added benefit of connecting personally with users in an unusual way.

**Mailed questionnaires**

A number of surveys of the MGH medical, nursing, and allied health staffs have been conducted using questionnaires to assess information needs, use or non-use of the library, and satisfaction with the library’s physical facility and collection. These data have been used to make improvements in existing services and to plan future services.

In 1986, the library attempted an ambitious survey of the information-seeking behavior of MGH medical residents. The results of this study were to be used to determine whether information centers on the hospital floors were needed to provide quick access to published information for patient care decisions and education purposes. A sociologist was hired to design the study and to construct a critical incident questionnaire. The questionnaire was designed to determine what would happen in a real incident occurring in the treatment of an individual patient; that is, an incident requiring medical knowledge not then possessed “with proper certitude” by a person responsible for the care of a given patient. Unfortunately, collection of data from busy, harassed residents was so difficult that the 16% response rate was too low to allow statistical interpretation.

But even this failed research project was instructive, because the data revealed important information about the needs and information-seeking behavior of the sixty-three residents who responded. Some of the data refuted prevailing beliefs about how physicians obtain information. The majority of the responding residents needed information for the direct care of a patient; needed it by the end of the day; consulted with another resident about the need; and then conducted the search in person by going to the department library and to the Treadwell Library, spending up to two hours locating the information they needed. When asked how they preferred to acquire the needed information, 2% checked “by talking to a recognized authority,” while 70% checked “by reading the literature” or “by reading the literature first and then talking with a recognized authority.”

These results indicated that the residents, at least those who responded to the questionnaire, needed better and faster access to patient care information than was available. Therefore, as library staff members planned for an ILS, they focused on the need to network the online catalog, an end-user MEDLINE system, and a drug and patient care full-text database to patient care sites throughout the hospital.

The most recent survey (1989) made use of a letter announcing a new ILS and an expanded, renovated library space to entice the staff to respond to the attached one-page questionnaire. This time, the response rate was 50%. Almost 1,000 respondents answered an open-ended question on their view of the major role of the librarian in the next decade: 80% cited the role as that of bridging access to electronic information and 50% also cited a teaching, helping, and advising role. Nine hundred respondents were interested in classes in bibliographic information management. This survey required the building of a database of 3,200 names of staff members. The database now is updated twice a year with a computer disk file received from the MGH administration and is used repeatedly in publicizing and marketing library services.

**Telephone interviews**

The latest study (1992) undertaken by the Treadwell Library staff was a telephone survey to assess how MGH neuroscientists meet their information needs and to identify the most effective means of fulfilling these needs. The plan was to develop a model of MGH professional staff information procurement practices, such that future studies could make predictions about needs, methods, and sources [16]. The model would need to encompass the full range of information needs, the methods used to procure information, information sources used, perceived barriers to obtaining information, and a projected ideal information environment. This pilot study included thirty-eight neuroscientists.

Preliminary analysis of the data has resulted in two conclusions. First, perceived barriers to information access tend to be related to the time rather than the expense involved in obtaining information. These barriers, besides time itself, include information overload, the difficulty of locating materials, the library’s distance from the hospital, and lack of training in
information access. Second, the M.D.'s and Ph.D.'s in
the sample appear to have different information needs
and methods for obtaining information. This sup-
ports a perception that has evolved among the re-
ference staff over the years: Treadwell Library serves
at least two publics. Thus, it might be necessary to
support a variety of services and training programs
to serve the needs of both the basic scientists and the
clinicians.

CONCLUSION

The Treadwell Library staff will continue its long-
standing practice of collecting objective data to help
in decision making. The ILS enables continual mon-
itoring of the use of the collection with regular anal-
ysis and reporting. These data can be especially use-
ful in making the tough journal selection and deletion
decisions the library faces during these economically
turbulent times. The annual surveys will be used to
update the profiles of current users so the library can
provide the most appropriate services. The study con-
ducted to assess how MGH staff members meet their
needs will serve as a model for further studies, be-
cause the library plans to replicate it for other de-
partments at MGH. Future research at Treadwell Li-
brary is expected to include evaluation projects that
should yield objective and empirical assessments of
the success of targeted library services and programs.
Treadwell Library has benefited greatly from its
strong commitment to practical research. To high-
light just a few of the long-term benefits—the library
staff has been expanded, and a permanent research
librarian position was added; the library space has
been enlarged; and the library's collection has been
shaped to be highly responsive to users' needs. The
status of the library also has been enhanced, because
hospital leadership respects decisions based on re-
search results.

The authors hope this paper will convince other
librarians, especially hospital librarians, that it is
worth the effort to conduct practical research projects.
The product of such research, objective data, can be
used to make sound decisions that benefit both the
library and its parent institution. Ultimately, the pro-
fession will benefit when librarians share the meth-
ods and findings of such research projects with their
colleagues through publication in the professional
literature.

REFERENCES

1. LOVE E. Research: the third dimension of librarianship.
10. HAMBURG M, CLELAND RC, BOMMER MR, RAMIST LE ET AL. Library planning and decision-making systems. Cam-
12. FENSKÉ, op. cit., 359.
14. BASTILLE, A simple objective method.
15. BOURNE CP. Some user requirements stated quantita-

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