
This research examines serials use studies carried out by ten different academic libraries. The different methods for measuring use in these libraries are examined and discussed. These methods include counting re-shelving statistics, surveying or observing library patrons, and conducting citation analysis, among others. The study will discuss the methods used and give recommendations for best practices for future libraries that want to conduct use studies of their own serials collections.

Headings:

Use studies -- Serial publications

Serial Publications – Selection

College and University Libraries -- Serial publications
SERIALS USE STUDIES IN ACADEMIC LIBRARIES: METHODS AND BEST PRACTICES FOR SUCCESSFUL STUDIES

by
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Introduction

Academic libraries are used extensively by students, faculty, staff, and librarians for a variety of reasons. Students use the library for class assignments and papers, faculty use it for research and to stay current in their fields, staff and librarians may also use the library for research, and all patrons may use libraries for personal or professional interest. To accommodate these various uses, an academic library must provide many different resources to its patrons. One of the most important resources for current information in any field is the journal. Academic journals, or serials in general, are important for academic libraries to collect, but are also one of the most problematic formats for libraries.

Serials and academic journals are valuable materials used extensively for research by faculty, staff, and students in academic libraries. These libraries generally attempt to collect as many titles useful to their user population as possible. In recent years, most libraries have confronted several problems with serial collections. From 1986 to 2002, journal prices rose 215 percent and libraries spent 260 percent more on journals, despite only collecting 14 percent more journal titles (ARL, 2003). Annual subscriptions to journals can cost thousands of dollars for a single title, some topping $10,000 (Cornell). Costs have risen so much that some libraries have dedicated virtually all their collection budget to serials, at the expense of other valuable materials. Beside the cost of subscriptions, serials also strain library budgets because they generally require binding, storing, claiming, and, potentially, repairing (Vaughan, 2003). With a growing number
of serials titles available online, many libraries are subscribing to both print and electronic versions of a journal, which often means they have to pay for both versions. To add to the serials problems, most libraries face dwindling shelf space, while most academic journals require large amounts of space so they can “grow” as new issues are received.

Trueswell (1969) stated “approximately 80 percent of the circulation requirements are satisfied by approximately 20 percent of the library’s holdings” (p.458). More recent studies have found this “80/20 rule” true for their library collections (Veenstra & Wright, 1988; Hill, Madarash-Hill, & Hayes, 1999; Sennyey, Ellern & Newsome, 2002; Enssle & Wilde, 2002). This rule holds true for serials collections. Therefore many low-use journals could possibly be cancelled to save money and space. Many libraries are considering reducing print serials holdings to relieve the budgetary and space constraints they create. “Reducing” these materials could involve selecting low-use titles to move from a main library to storage, or determining titles that could be cancelled, or possibly discarded, completely. Before a library can cancel a low-use journal, however, it must determine which journals have low usage. To do this, many libraries undertake use studies to measure journal usage and how frequently each title is used.

Use studies of library materials often depend on circulation statistics for their data. However, this is generally not possible for serials collections because these materials are often non-circulating (Blake and Schleper, 2004). Therefore, libraries must identify other means of measuring use. This paper examines different methods academic libraries use to measure serials use. For this research, reports of serial use studies from
different libraries were examined, along with perceived strengths and weaknesses of these methods.

Journals are problematic for libraries to collect. In order to maximize the efficiency of a given library’s collection the use of these materials must be studied. Funding that has been wholly dedicated to serials collections can be redirected to other important library materials or to improving library services to users. Many libraries are being forced to cut their budgets, sometimes drastically, and remove high-cost, low-use serials. This is a quick way to cut library expenditures, as is canceling low-use titles, regardless of cost. Use studies are also important to consult when libraries must identify which journals should to be moved to storage. This is imperative to prevent frequently used titles from being moved off-site.

Beyond space and funding other reasons exist for conducting use studies in libraries. Veenstra and Wright (1988) state “local journal use studies have an important role in effective library administration” (p. 164) and suggest that, without current use studies of the periodicals collection, librarians will not be as aware of the needs of their users. Even if the library is within its budget and has plenty of space, its collection may not address the needs of its users. Saxton (2003) similarly suggested that, without regular use studies, libraries may maintain subscriptions toserials that were initially purchased for programs that no longer exist or faculty members who no longer are at the institution. Identifying these materials and their use is important to maintaining a collection relevant to a library’s users.

A working understanding of use studies, how they are conducted, and the strengths and limitations of different methods of measuring use, is important for any
academic library. All academic libraries subscribe to large numbers of serials, and all will face budgetary, space, or other problems with these materials. Use studies allow libraries to make informed collection decisions that best speak to the needs of their patrons.

**Literature Review**

There exists much literature on the value of serials use studies to academic libraries and different methods libraries can employ to measure this serials use. By studying these methods, a library’s staff can make decisions about conducting their own studies.

Blake and Schleper (2004) reported on several different methods libraries can employ to measure serials use. They first suggested comparing a library’s collection to a peer or “best in class” institution to compare serials collections. This can demonstrate the quality of a collection and suggest titles that should be acquired or removed. They also suggested seeking input from library patrons (faculty and students) when making collection decisions. The faculty of an institution is aware of important titles in their disciplines, and can suggest titles that are essential to collect and those that are less important and can be cancelled or removed. However, faculty may be biased towards their own research interests. Seeking input from students can provide information on the immediate serials needs of the institution, and can give libraries a picture of what is needed for current courses. Patrons can also provide anecdotal evidence of library materials use, and an observant librarian can learn from listening to patrons and colleges discussing the collection what materials it needs. Blake and Schleper also suggested
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Librarians study wear and tear and accumulation of dust in the library to determine what parts of the collection are used frequently and which ones are never used.

Veenstra and Wright (1988) examined journal use studies in fifteen libraries of varying kinds and then suggested several ways to measure journal use. They stated “difficult questions about collection management of journals are simplified when decisions can be based on the recorded needs of all persons using the library” (p. 164). They suggested using requests for items in a closed collection for measuring journal use and monitoring the re-shelving of journals in open collections. They also suggested using photocopy statistics, as users most often photocopy journal articles. A final method suggested is giving questionnaires and surveys to library users regarding their use of serials. In their description of the fifteen use studies examined, Veenstra and Wright divided the studies as three different methods, “data from closed stacks,” “controlled photocopies,” and “re-shelving.” These studies covered different types of libraries and journal collections that ranged from 48,800 to 185 titles. It was found that smaller collections, on average, had a greater percent of uses per title than the larger collections. Veenstra and Wright conclude that use of journals may be increased by greater decentralization of large university libraries into smaller, more specialized collections.

Colorado State University Libraries undertook an extensive serials use study to make collection decisions when the library’s budget was cut. Enssle and Wilde (2002) reported on this study, which used many different methods to determine serials use. They first reviewed different methods that can be employed to collect use data of non-circulating materials. They discussed re-shelving statistics, commenting here on the “sweep” method. This method requires requesting users not re-shelve serials, and then
library staff collects these serials and count each use of a particular title before re-
shelving the volume. Also discussed is the “slip” method, where a slip of paper is
inserted in a journal and users are asked to initial or check the slip each time they use an
item. In the actual study of CSU’s libraries, the researchers used the “sweep” method of
collecting and counting re-shelving statistics. They also studied online data from e-
journal aggregators to determine which journals are used most often online, interlibrary
loan statistics to see which journals were used by members of other institutions and what
materials their users request most often from ILL, citation analysis to see journals their
faculty cite and publish in most frequently, and the Institute for Scientific Information’s
(ISI) journal impact factors. These impact factors evaluate the frequency that an
“average article” in a journal is cited, and then compares this to other journals in the same
discipline, in order to illustrate which journals are the most important to their respective
disciplines. Data collected in this study was analyzed by discipline because “low use” in
one discipline might be fewer than two uses a year, while in another discipline, low use
might be fewer than fifteen a year. Enssle and Wilde also noted that a journal with low
use in their library may be an important title for a particular discipline, which is why
citation analysis and examining impact factors were important before removing certain
titles from the collection. They concluded that a variety of use statistics is valuable when
a library has to decide what materials to remove from the collections.

Gallagher, Bauer, and Dollar (2005) reported on a use study undertaken at
Cushing/Whitney Medical Library (CWML) to research possible changes in print journal
use when the number of journals available online rose. This study also employed several
different methods of measuring use. These included collecting use statistics for unbound
print journals by collecting and counting used serials not re-shelved by patrons, studying annual photocopy statistics, and examining gate counts at the library. They found that, as electronic journal subscriptions increased, use of print serials, photocopying, and library gate counts decreased. They state, about photocopy statistics; “There are several methods to track [the decrease in print serials use], but the most accurate and telling gage of this decrease had been the considerable drop in the number of photocopies made in the library’s public photocopying room” (p.173). They found that 56 percent fewer copies were made between 1999 and 2003. In the same period, they found a 32 percent decrease in the number of patrons actually visiting the library. As well, only 53 percent of the current print journal collection was used during a three-month study. These statistics point toward lower print journal use in this library.

A more intrusive method of measuring serials use is discussed by Sathe, Grady, and Giuse (2002). They studied print and electronic journal use at Eskind Biomedical Library (EBL) at Vanderbilt University Medical Center (VUMC) by surveying patrons on their serials-use habits. The current issues of fifteen high-use journals were placed behind the circulation desk, and patrons requesting an issue of these journals were asked to fill out a survey that asked them to identify themselves (as faculty, students, etc.) and how they intended to use the journal they requested. Students observed using e-journals on library computers were also asked to complete a similar questionnaire, which included questions on why patrons used the online journal and which format they preferred for serials. The researchers found that, in general, users preferred online journals, but some user groups preferred print. Many users had no preference for format. This study
measures user preference for journal type, but the method employed does not indicate which titles were used and which were not.

Many use studies attempt to seek input from library patrons for making collection decisions. In an academic library, these users are generally faculty and students. Joswick and Stierman (1995) discussed seeking faculty input, but cautioned that; “While the solicitation of faculty expertise and cooperation in a cancellation project is generally considered to be politically essential, the accuracy of the teaching faculty’s evaluations of journal usage is frequently questioned” (p. 454). This is because faculty members often suggest maintaining journal titles as researchers, not considering that general or undergraduate-level serials, which are not often used by faculty, are used frequently by students. When Western Illinois University (WIU) had to cancel serials, librarians created lists of journal titles divided by academic department, and sent them to faculty for review. The faculty was to decide which titles should be cancelled and which should not. Librarians found that the faculty often recommended keeping “expensive, esoteric titles at the expense of heavily-used core journals in their own specific fields and in broader, interdisciplinary fields” (p.455). The library preserved many titles they believed were highly used by students, despite faculty recommendations. Another use study was then undertaken to ensure that these titles should remain in the collection. This library used citation analysis of both faculty and student papers in order to determine which journals were most frequently published in and cited by faculty and which were cited most by students. They found that 69.1 percent of titles recommended for cancellation by faculty but preserved by the library were cited in student papers. Therefore, it was concluded that, while faculty were generally good at identifying journals to preserve in their own
disciplines, they might recommend canceling journals used frequently by students. Therefore, seeking the advice of just the faculty in a use study may not give a realistic indication of patron need.

A final method for measuring journal use, not frequently employed, but useful to study, is discussed in a 1977 study by Wenger and Childress. This method is unobtrusive observation. In a study at the National Oceanic and Atmospheric Administration Library, librarians combined re-shelving statistics (employing the “slip” method mentioned above) with observations of user behavior. During this study, 55 acts by patrons were observed. The researchers found that, in any journal use that lasted fewer than ten minutes (scanning or browsing a title especially), patrons always re-shelved the journal, despite signs informing them not to re-shelve. In cases where journal use lasted over ten minutes, patrons usually placed the item in the return bins. This library decided not to count brief scans as a use, so observed re-shelvings were not counted. Observations can give librarians a better idea of user behavior, and may give an indication of how often users disregard signs informing them that journals should not be re-shelved.

While different libraries use similar methods to measure use, they often have different approaches to these methods. One of the most popular methods for measuring serials use is counting re-shelving statistics. The most common method of doing this is the “sweep” method which involves, first, posting signs around the serials section of the library requesting users not re-shelve materials. Then, the library staff collects used materials in the library and records each use before re-shelving the journal (Hill et al., 1999). This basic method can be adapted for different libraries from a simple and low-tech process to a high-tech one. The Hill et al. study (1999) involves posting signs
throughout the library that request users not re-shelve periodicals. Then, student assistants regularly collect used materials in the library. Once collected, use of each material is marked on the item. For the first use of an item, a self-adhesive label is placed on the item, and for each subsequent use hatch marks are placed inside the cover. Once materials are bound, the labels are color-coded to indicate in what year the journals were used. Data are then inputted into a form which specifies how many times a title was used in a range of dates. These data are later entered into a use study database. This study examines use of both bound and unbound serials, is fairly low-tech, uses student assistants to collect the data, and has lasted over ten years.

Ralston (1998) reported on a more automated method of counting re-shelving statistics. At the Indiana University Ruth Lilly Medical Library, a barcode is assigned to each journal title and mounted beside the journal on the shelves. Portable barcode scanners are used to scan the barcode each time the journal is used. The data from the barcode scanners are then uploaded into a relational database. This method cuts out much of the labor required with manual methods of recording use. No one has to physically mark when the journal is used, and no one has to manually enter use data into the database; these processes are automated. This use study is also continuing, and has been employed for over ten years. However, it only measures use of periodicals published during the past three years from when the study is taking place, except for current issues shelved in the reading area, which contains the most current issue of forty popular titles.

Approaches to use these studies vary greatly in other ways as well. The length of study can vary by institution, from the long-term studies mentioned above to the three-
month study undertaken at the CWML (Gallagher et al., 2005). Studies also vary by materials counted as use. For example, the CWML study only counts use of current periodicals before they are bound, while a use study undertaken by the Hunter Library at Western Carolina University (WCU) counts use of “dead” (ceased and cancelled) titles, current issues, bound issues, and even titles on microfilm (Sennyey et al., 2002).

Veenstra and Wright (1988) discussed a variation on the “sweep” method that attempted to count how many articles were used in each journal, not just which titles were used. In this 1970’s study at Wolverhampton Polytechnic Library, computer punch cards were placed inside bound and unbound volumes of journals. Then, users were asked to remove one card for each article read or consulted. These cards were collected for five months, and then processed by librarians. This gave the library an impression of which journals were used and how many articles were used in each.

Methodology

For this research, the methods for conducting use studies at different academic libraries were examined. These methods were determined by studying the written reports of use studies in scholarly journals. These articles were found in several ways.

First, a search was conducted on different article databases to find relevant use studies. The two databases used were Library and Information Science Abstracts (LISA) and Library Literature & Information Science. A search was entered into each of these databases for “use study” AND “serial” OR “periodical” OR “journal.” Results were further limited to peer-reviewed articles only. Once potential articles were found, they were read and reviewed to determine their relevance to this research. Articles detailing use studies in academic libraries were selected from these results to study.
Articles were also found by reviewing the bibliographies of these articles found in LISA and *Library Literature & Information Science*. Once the articles were read, relevant citations in the text and bibliography were identified for later study. This was done so earlier studies which influenced more recent studies could be identified. These cited articles were identified, and then read and reviewed for relevance to this research. Articles detailing a use study in an academic library were selected from these for use in this research.

Ten use studies were chosen to research and compare. These studies took place at the following libraries:

1. Cushing/Whitney Medical Library at Yale University (Gallagher, et al., 2005)
2. University of Akron Science and Technology Library (Hill et al., 1999)
3. Hunter Library at Western Carolina University (Sennyey et al., 2002)
4. Ruth Lilly Medical Library at Indiana University (Ralston, 1998)
5. University Library at the University of Saint Francis (Lafferty, 2006)
6. Library at Austin Peay State University (Saxton, 2003)
8. Eskind Biomedical Library at Vanderbilt University Medical Center (Sathe et al., 2002)

Once these studies were identified and read, the next step was to determine how use was measured in each study. Some studies used only one method, and some used several. Examining the methods in each study yielded nine different ways use was studied. These are:

1. Recording re-shelving statistics (collecting journals periodically to measure use)
2. Unobtrusive observation
3. Interviewing or surveying library patrons
4. Seeking faculty input
5. Examining photocopy statistics
6. Examining interlibrary loan statistics
7. Citation analysis
8. Examining journal impact factors
9. Studying library gate counts.

These different methods were listed, and a mark was made on a chart each time a particular method was used. Studies that used a combination of methods were also identified and counted. It should be noted that some studies measured use of both print and electronic journals. Only the methods used to measure print journal usage were recorded since they are the methods that will be examined in depth in this study.

Once the different methods of measuring use were identified and studies using them were counted, the methods were examined in-depth. This research not only examined the different ways libraries measured use of their materials, but it also looked at the different ways a library might conduct each method. For example, a library could approach the “sweep” method many different ways. Differences in timeframe, data collection, and data storage were noted. Also examined were the identified strengths and weaknesses of each method, as well as strengths and weaknesses of the method not identified in the article but perceived by this researcher. Results of the study and decisions made by the library because of these results were also examined. It was noted what information was used and how it was used in the library that collected it.

The information collected in this research will be used to suggest methodologies for future use studies and identify the strengths and weaknesses of each method. Further, the information will be used to suggest best practices and recommended methods for future studies.
Limitations

There are a few limitations associated with this study. First, since this study is dependent on other’s research, it must assume the reporting of collection methods was both complete and accurate. Further, not all the studies examined described their methods in detail. One study, for example, provided almost no specifics on how data were collected. Additionally, although it referenced another study that used a similar method for collecting use data, it did not provide a citation to it. While some studies provided good detail of some parts of their research, they did not describe other parts, e.g. how data were stored after being collected. Despite these limitations, sufficient information existed to illustrate how each method was used and the strengths and weaknesses of each.

Results

The most common method for measuring use of periodicals in these ten studies was measuring re-shelving statistics. Nine of the studies reviewed used this method, generally using some form of the “sweep” method. Two studies employed unobtrusive observation of patron behavior. One surveyed or interviewed patrons about serials use. One study sought faculty input on use of titles. Photocopy statistics were analyzed in one study, and interlibrary loan statistics were studied in two. One study used citation analysis of faculty papers while journal impact factors were studied by two libraries, and library gate counts examined in one. Five of the ten academic libraries used a combination of two or more methods (see figure 1).
Four of five libraries that used only one method to measure library serials use examined re-shelving statistics for their libraries. The library that did not use re-shelving statistics only surveyed their patrons on their serials use behaviors. Two studies used four of the listed methods, one using re-shelving statistics, photocopying statistics, library gate counts, and journal impact factors, and the other using re-shelving statistics, journal impact factors, unobtrusive observation, and interlibrary loan data. Of the remaining studies, one used three methods (re-shelving statistics, citation analysis, and impact factors) and two used two methods (one using re-shelving statistics and faculty input and the other using re-shelving statistics and unobtrusive observation).

There was a wide variety of approaches to many of these methods. Counting re-shelving statistics especially had a variety of methods used. Time frames of the studies varied from three months to ongoing (extending over ten years without plans to stop). Four libraries have ongoing studies, four had some limited time frame (three months, six months, one year, and ten years), and one did not note a time frame. Most studies
employed library staff to do the collecting and marking of periodicals for the study, but one study asked users to put a check mark on a slip inside the cover of the journal each time they used an issue. The studies also examined different types of serials. Three of the studies only counted use of current, unbound periodicals. One counted use of only bound titles, while another counted use of both bound and unbound titles. Counted use of all serials in the library, including ceased or cancelled subscriptions, current and bound titles, and titles on microfilm was used in one study. One study counted use of bound and unbound issues, but only bound volumes from the current three years were counted while use of forty popular titles in a different section of the library was not counted. Finally, two studies did not mention what journals they counted.

Other differences in re-shelving counts included different methods of informing users a study was taking place (including signs, putting a notice in the library newsletter, and informing students of the study during orientation). Different methods for recording data also occurred. Use of a single item could be counted either manually, by tallying journal use in pencil inside the journal, for instance, or electronically, by entering use data directly into a spreadsheet or database. Four of the studies examined recorded use data manually while four others recorded it electronically. Recording use manually either involved tallying uses on the physical item itself or a printed list of journals. Recording it electronically involved entering the information into a database or spreadsheet. Once these data were collected, they were stored in a database (five studies) or on a spreadsheet (two studies). The two oldest use studies (from 1977 and 1981) did not explicitly discuss how data were collected or stored. However, it is assumed that it was both collected and
stored manually. One of the more recent studies did not discuss how use data were stored once collected.

The other methods of measuring use were fairly similar throughout different libraries. In one of the studies that observed user behavior, users were observed in the periodical section of the library by staff and their behavior while using the serials was noted. The other study that observed patron behavior did not specify how these observations were carried out. Both studies that examined journal impact factors used the Institute for Scientific Information’s (ISI) impact factors. However, one of these studies was conducted in 1977, when ISI listed impact factors for only 1,000 journals (Wenger and Childress, 1977). The other took place in 2002 (for reference, currently ISI lists impact factors for over 7,500 titles) (ISI, 2006).

Both libraries that studied interlibrary loan statistics used similar methods to examine these data, however, one study was conducted in 1977 while the other in 2002, so the information in the more recent study was automated, while the ILL data in the earlier study was in print format.

The study that sought faculty input first conducted a use study that examined re-shelving statistics. Once these data were collected, a list of titles for each academic department was compiled and the faculty of that department was asked to decide which materials to cancel. Since some faculty questioned the validity of usage statistics, the data from the use study were only provided if the faculty requested it. If the faculty did not make decisions about which journals to cancel, the library used use study data to discontinue low-use titles.
Finally, the study that employed citation analysis used ISI’s *Local Journal Use Report*, which gives, for a fee, a list of journal titles in which an institutions’ faculty has published, or the publications they have cited in their writings (Enssle & Wilde, 2002).

**Discussion**

A number of different methods exist for measuring journal use. While nine different methods were examined for this research, many others exist. The most popular method by far is counting how many times a journal is re-shelved. The most popular way of doing this is by employing the “sweep” method, where patrons were asked not to re-shelve journals, and then library staff collected these journals and noted which journals were used. This method has many strengths and weaknesses. One strength is this is one of the best ways to see what actually is happening in the library stacks. While some titles may be over- or under-counted, journals that are used frequently will appear more often in the re-shelving area. For example, if a journal is used three times before it is counted, then it will most likely be used fairly frequently, and a journal that is almost never used will not be re-shelved frequently, even if it is removed from the shelves once or twice and then not used. Re-shelving statistics are generally considered reliable (Sennyey et al., 2002), and this reliability can be increased with studies of longer duration, as this will identify journals used for courses in different terms or offered every few years.

Re-shelving statistics are simple to collect and compile (Lafferty, 2006). Whether the data are collected and stored manually or electronically, counting and tallying how many times a journal is used is simple. Any library employee can be taught to do it fairly quickly. A library can depend, with good deal of confidence, on student workers to
collect, count, and re-shelve journals reliably. This frees the professional and
paraprofessional staff for other library duties.

A major weakness is that the accuracy of the data collected is often questionable.
No matter how librarians inform patrons that a use study is taking place, and no matter
how many signs are posted in the library requesting that users not re-shelve journals,
users do re-shelve some journals anyway. Some patrons may re-shelve a journal because
they want to be “helpful” (Lafferty, 2006); others may browse a journal at the shelf and
then re-shelve it if they decide it is not useful. In an observation study of patron
behavior, Wenger and Childress (1977) found that 38 percent of the total use studied
involved users browsing and then re-shelving titles. Even if a patron does not re-shelve
the journal, it is impossible to determine how the journal was used when it was off the
shelf. A patron may have browsed the journal, read an article from it, or read several
articles (which might possibly count as more than one use depending on the counting
“rule” employed). Sometimes, used journals are used again by another patron once they
are taken off the shelf but before they are re-shelved by library staff (Hill, et al., 1999).
Patrons may also remove journals for reasons completely unrelated to actual use, e.g. to
block an air vent, or patrons may pull issues of their favorite title to make it look “used”
(Gallagher et al., 2005, Sennyey et al., 2002).

Another disadvantage of using usage statistics is that the data collection is often
tedious and uninteresting for the staff that must collect the data. Manual studies are
especially time-consuming. Saxton (2003) says, of a manual use study “these data…were
cumbersome to maintain, inaccurate due to staff resistance to daily compilation…”
(p.262). Since this task is often time-consuming and tedious, the actual collection of the
data is often left to student assistants, who may also make errors due to lack of experience (Lafferty, 2006) or interest in collecting the data accurately.

Finally, the method a use study employed might make its results less accurate. For example, some use studies only examine re-shelving statistics of current periodicals. If only current periodicals are studied, the library does not know about the use of older titles. Some serials may have relatively low use of their current issues, but higher use of their backfiles. If these back issues are not counted, a title that receives considerable use may be cancelled, discarded, or moved to storage.

Surveying users is another good way to get information on how a library’s collection is used. While only one use study examined in this research employed user surveys, many mentioned surveys as helpful tools for measuring use. Surveys of patrons (in an academic library generally students, faculty, and staff) can provide a library with an idea of the area of the collection used most, where users think the collection needs improvement, and what materials are unused. Surveys of students can provide a library with an idea of the immediate curricular needs of users. Surveys of faculty can inform the library of what faculty need immediately for their classes and research as well as important journals to collect in their subject discipline (Blake & Schleper, 2004).

While surveys have many strengths, there are some drawbacks to the survey method. First, the response rate of surveys is notoriously low. Surveys with a low response rate may not be valid or may be biased because of the small sample size (Veenstra & Wright, 1988). Often, survey respondents take the survey because they have a strong opinion one way or another about the library collection (Blake & Schleper, 2004). This increases the risk of bias in the survey results. Further, survey results can be
difficult and time-consuming to compile, and therefore more demanding on library staff time and library funds.

Other methods of measuring serials use have their own strengths and weaknesses. Observing patrons while they are using the periodicals collection is a good way to monitor which journals are used and how they are used when they are off the shelf. When combined with a re-shelving study, observations can show librarians how materials are used off the shelf. They will also suggest the success or failure of the notifications that users not re-shelve journals once they are used and the possible need for higher-profile notifications. However, observations of user behavior can also be considered a violation of user privacy, especially if the study wants to examine use of particular titles. This method is also time-consuming. Library staff might not have the time to stand in the periodicals section and observe user behavior.

The remaining methods observed, photocopy analysis, ILL analysis, citation analysis, and examining journal impact factors and gate counts are all useful in measuring serials use. Photocopy analysis cannot tell the library how many articles are being copied from journals, and cannot give data about specific titles. However, since patrons mostly photocopy articles from non-circulating titles (which generally include serials), a major drop in the number of photocopies made will suggest a drop in the use of serials. Similarly, while library gate counts cannot tell the library how serials are used, a drop in gate count will suggest a drop in serials use, as well as use of the entire collection. A drop in the number of titles requested through interlibrary loan may suggest users are finding the resources needed in the library whether in print or electronic format. An increase in ILL requests will suggest the current collection is not sufficient to meet user
needs. A library may want to subscribe to a journal that is requested frequently through ILL. As well, if a title is determined to be low-use in an individual library, but ILL statistics show the title is requested frequently by other libraries, a library may decide against discarding it.

Citation analysis can tell a library which journals held by the library are used. Some companies, such as ISI, will provide a list of their journals that have been cited or published in by faculty or other researchers associated with an institution. Libraries can also conduct author searches of researchers at their institutions in periodical databases and indexes themselves. The resulting list can be compared with a list of journals held by the institution. This can indicate which journals in their collection are most heavily used. However companies do charge for this service while conducting the search at the library could become quite time-consuming and costly. Doing searches using companies or online databases generally will only give an indication of how journals are used by faculty and researchers at an institution who actually publish in journals. Joswick and Stierman’s (1995) use study employed citation analysis of faculty and student papers. It required librarians to acquire and examine student papers to determine what journals were cited most frequently by students. If a library only studies citations of faculty papers, some titles appearing to be low-use may, in fact, be used heavily by students. Therefore, it is essential that libraries wanting to use journal citations to measure serials use examine citations by both faculty and students.

Journal impact factors are also available as a fee-based service. These are particularly useful after a use study has been conducted and a library is ready to make collection decisions. Some journals may be low-use within a single library, but they may
be very important in their academic discipline. If a library needs a strong collection in a particular academic field, then they would likely want to include the highest-impact journals in that discipline. Libraries may also need to collect these high-impact journals so the academic departments can maintain accreditation (Blake & Schleper, 2004). Journal impact factors can be useful tools for identifying what titles a library should collect or what subscriptions should be maintained, and which ones can be discarded.

Recommendations

In light of the strengths and weaknesses of the various methods for measuring serials use, some recommendations for conducting them can be made. For measuring re-shelving statistics, if the process of collecting usage data is automated, it will be quicker and the information more likely to be accurate. A use study discussed by Saxton (2003) changed from a manual to an automated one, and Saxton stated “students appreciate the ease of use of this computerized method, which had an immediate impact on the speed of re-shelving” (p. 262). Studies that used barcode scanners to enter re-shelving data directly into a database or spreadsheet eliminated a major potential for human error. In any use study, there is a higher risk of error when a staff member has to enter information into a database manually. Automation of data collection appears to lead to greater staff satisfaction with the process, as well as higher efficiency and accuracy.

While there does not seem to be much a library can do to increase the accuracy of re-shelving data that is made less accurate by users re-shelving journals, libraries can take actions to reduce this behavior. Many libraries only posted signs asking users not to re-shelve journals in the areas of the library where the study was taking place. Other studies not only used signs, but also placed a notice in the library newsletter (Wenger &
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Childress, 1977) or explained the importance of not re-shelving journals during orientations to the library (Lafferty, 2006). It would seem obvious that, the more users are reminded not to re-shelve journals, the more likely they are to follow these directions. Notices of current studies taking place should be posted as many places as needed or reasonable.

The length of time a study takes can also greatly affect a study’s accuracy and success. If a study only lasts from a few months to a year, it might not take into account serials used for classes offered only every few terms. Some serials may only be heavily used one term every year or every other year. A use study that does not last more than a semester might find these serials to be low-use. Therefore, a longer use study is more informative because it will take classes only offered less frequently into account. Inaccuracies in count due to users re-shelving journals themselves or pulling journals for non-use-related purposes are reduced with a longer study. Information about journal use from a longer time period shows high- and low-use titles more accurately than will a short-term study.

Finally, as much as possible, re-shelving statistics should be counted for serials in all formats and should include both current and bound periodicals. While this is more labor-intensive and difficult for libraries that inter-shelve their bound periodicals with the general collections, it gives a library better understanding of which titles are used and how. Some titles may receive less use of current issues, but higher use of backfiles. If a use study only counts use of current issues, then a journal could be identified as “low-use” despite the fact its back issues are used more frequently. A use study that only counts use for current serials will only give the library information on what should be
done with current subscriptions. Looking at re-shelving statistics of ceased or cancelled titles can further identify issues that could be discarded or sent to storage. Studying use of serials on microfilm can identify items in this format that might be moved off-site.

For surveys, a major concern is inaccuracy of information due to a low response rate. To increase the accuracy of surveys, libraries can use a method similar to the one librarians at Eskind Biomedical Library used. It required users to complete a survey any time they wanted a current issue of one of 15 heavily-used titles (Sathe et al., 2002). Libraries can also distribute surveys to everyone who enters the library, or surveys can be given to students when they access online resources in the library. The library can also request faculty to distribute surveys to some of their classes in an attempt to get a higher response rate.

Each method for measuring print serials use alone has potential problems. Using just one method can leave questions about how journals are really used in the library. However, if a library employs several methods for measuring serials use, effectiveness of the study can be greatly enhanced. For example, the study by Wenger and Childress (1977) that combined counting re-shelving statistics with observation of patron behavior was able to measure how journals were used once they were taken off the shelf. It could determine if users re-shelved journals themselves. Combining re-shelving statistics with a survey can also give a library some idea of how patrons actually use library materials once they are off the shelf. It also could reveal patrons’ attitudes about different formats of serials, as well as which titles they use most often. Reports of journals faculty and other researchers at a given institution cite can be purchased, and this information can be combined with re-shelving statistics, which will show titles students and other patrons are
likely to use most frequently. Photocopy and ILL statistics and library gate counts can reinforce a library’s findings that journal use is increasing or dropping. One method alone may not give the whole picture of serials use within a library. Combining methods can ensure higher accuracy of the results, and will lead to more effective application of these results to the library’s collections.

Conclusion

This research has studied different methods for measuring use of print serials in academic libraries. Researching how other libraries conduct use studies is very valuable for any library that wants to conduct its own use study. Knowledge of what has “gone before” will inform the use-study process, and will suggest to librarians the most effective methods for measuring use in their own libraries.

Examining these ten use studies has shown the different methods libraries use to measure use of their serials collections, as well as the different approaches libraries have for each method. Counting re-shelvings of print serials was the most popular way of measuring use, although libraries approached these studies in many different ways. Studies using a combination of methods to collect journal use had more information about which journals were used in the library and how they were used. Combining different methods is a way to ensure the information from the study is accurate and complete.

Current problems with serials, including budgetary and space constraints, have forced libraries to examine their collections in order to make decisions about canceling subscriptions, moving items, or discarding volumes of serials. Libraries must be informed about how their collection is used and what materials their patrons use most.
Conducting a use study is the only way to get reliable information on what materials are being used in the library and which ones can be discarded. Serials prices will undoubtedly continue to rise faster than library budgets and library shelves will not be able to accommodate growing serials forever. Therefore, librarians must be aware of ways to measure use of these materials, so when the time comes to remove items from the shelves, the library’s collection can still support the needs of its patrons.
References


