Research Notes

Time Required for Shelf Reading—A Case Study

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While the subject is of importance to library administrators planning budgets, there is little information available in the literature on the time needed to maintain proper shelf order. A volunteer staff's recent experience with reading and reshelving an academic library's Z classification suggests such work can be done at a rate of 554 to 613 volumes per hour in a collection that includes serials. The value of the commonly accepted statement that a library is effectively "full" at 86 percent of capacity is also verified.

For academic libraries in the United States, the open stack library is the norm.[1] At the same time, there are very real costs associated with the open stack arrangement.[2] Perhaps most frustrating, however, is the tendency of material to become disorganized—either by accident or intention.

The obvious solution to the misshelving problem is a regular program of shelf reading. Unfortunately, this is a very difficult program to implement—the general impression of potential workers (usually students) is that it is boring work, and it is. Of course, it is never-ending work as well. But perhaps the most important impediment to regular shelf reading is the potential cost. At least one library estimated that this task required about 10 percent of its student budget.[3]

There is very little information on the exact costs. Bookstein, for example, provides a useful formula for allocating a given amount of time among parts of the collection but other than assuming one person could read 600 volumes per hour, does not suggest what should be a reasonable amount of time.

The literature is virtually silent on the issue, to the point that shelf-reading costs are not usually included in discussions of alternative shelf arrangements. Discussion of the advantages of open versus closed stacks tends to focus on the nature of the disadvantages of browsing[5] or compare varieties of compact shelving with the traditional open stacks but to leave shelf reading out of the equations, including only comparative times for reshelving and paging.[6]

Since formal inventories involve a form of shelf reading, however, some studies related to these do provide information. At Houston Public Library, using a 2-member team to check the shelves and

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mark found items on the shelflist card, the team could handle an average of about 86 books per hour, or 43 books per person-hour.[7] In a similar study at the University of Texas Health Sciences Library, the figure was 40.6 books per person-hour using a two-member team.[8]

Other libraries kept track of the shelflist cards rather than the volumes on the shelf. The University of Kansas, for example, reports that 1,300 cards can be checked against the shelf in 6 person-hours, for a rate of 217 cards per person-hour.[9] Results from the University of Michigan yield a rate of 300 cards on a first pass and 222 cards per person-hour on a second search (for items not found in the first).[10] Since one might assume at least 1 volume per shelflist card, the variation between these and the first two reports is surprising. It is worth noting however, that Kansas did not check serials holdings and that Michigan participants felt their sample was deficient in serials.

Searching for specific items is a task related to straightening the shelves. Brigham Young University's Lee Library, searching for a group of 384 lost books, reported a rate of 60 books per hour for the general stacks plus another hour for searching the Reserve Room for the remaining 27 books, or an overall rate of 55 books per hour.[11] Purdue reports a full search of the entire library took 3 staff 3 weeks, a rate of 10 books per person-hour.[12]

Normally, however, shelf reading is not an inventory and is intended to prevent the obvious costs of searching. The only formal study of this process was performed at Princeton by a private consulting firm. Its final standard, based on a number of experiments, is "20 students working with three supervisors and one project coordinator for five hours per day for three days can read 1,500 standard sections [7 three-foot shelves with 180–200 volumes per section]." This gives a range of 750 to 833 volumes per person-hour for the 24-person team.[13] Unfortunately, while the data on time are very explicit, it is apparent that the authors merely accepted the *usual* library figures for the number of volumes shelved in a *standard* section. And, when the teams found a misshelved item, they reshelved it only if it was close to its proper location, collecting the other items and leaving them for later work. Thus, the figure still does not give the full cost of what most library managers consider shelf reading.

Recent experience at a larger academic library may help to provide a benchmark for the time involved in such work.

In response to a perceived problem in the Library of Congress Z class (collection shifts resulting from construction of a major addition forced the library to reduce normal shelf reading), the Student Association of the School of Library and Information Science at the University of Wisconsin–Milwaukee volunteered to assist. After appropriate clearance from the library administration, student volunteers spent 2 days reading the entire Z collection (with the exception of seven sections at the end of the sequence that were inaccessible due to construction). Given the lack of information on this type of work, each volunteer noted the beginning and end of time periods devoted to the project: it took 68.75 hours to complete the 235 sections.

In order to obtain more accurate data, a good estimate for the size of the collection was required. This was obtained by sampling every fifth shelf in the 235 sections. Measurements were obtained by compressing all volumes on the shelf to the left, measuring the material to the nearest inch, and then actually counting all volumes on the shelf (loose issues in Princeton files of similar boxes were also counted as a volume per box). The results give number of Z volumes in the classification, as well as capacity of the shelves and percentage of capacity, within a 5 percent error.[14]

At the time of the sample, the Z section was just under 85 percent full, giving an average shelf (35½ inches long) an expansion space of 5.3 inches. The volume count showed an average of .89 books per inch, or 10.7 volumes per foot in this collection, which includes bound journals and pamphlets. The range of items on a full shelf was between 9 and 70 volumes. Actual count of the 235 sections yielded 1,497

shelves, or an average of 6.37 shelves per standard (90 inches high) section. Applying these results to the total shelf area gives an estimated capacity of 47,388 volumes, with 40,259 actual volumes present (±5 percent).

This information is interesting in view of the usual assumption of 7 shelves per section. This classification actually has a capacity of about 202 volumes per section. However, using the actual volumes per foot (10.7) times the *normal* assumption of 7 shelves per section, the theoretical capacity would be 222 per section. Thus, while the area can only hold about 47,400 volumes in this classification, normal planning assumptions would put its capacity at about 52,200.

In any event, the project took about 69 hours. Thus, the shelf reading of the entire classification with highly motivated volunteers, many with some work experience in libraries and all familiar with the Library of Congress classification, was done at an average rate of 583 volumes per hour (or between 554 and 613 volumes per hour).

The "reading" included reshelving all Z-classification material in its proper place (including placement of all volumes of periodicals in correct sequence); putting material outside Z on a nearby carrel for staff handling; and simple weeding (third and higher copies of all titles were placed on a nearby carrel for later deaccessioning consideration).

The project provided an example of the validity of the "common wisdom" that a library is full at 86 percent of capacity,[15] since some reshelving required considerable shifting of other material. The worst case was the replacement of 1 volume of a bound journal (*Journal of Australian Librarianship*) on a full shelf. This 1 volume required shifting 47 other shelves in order to gain space. While it is true that these shelves were all nearly full because they were bound periodicals, it is also true that the shifting was much faster and easier as a result.

Thus, the current study suggests that Bookstein's "about 600 per hour" is not far off as an estimate for shelf reading. A range of costs between regular shelf reading on the one hand and searching for items users can't find on the other should be considered against the costs of various closed-stack arrangements in future studies of the value of shelf access. Ideally, other libraries will also make an effort to obtain similar data in their own shelf-reading projects, so that a de facto standard will in time emerge.

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Dissertations—An Online Dilemma

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There are few bibliographic aids available to the online searcher who has questions concerning dissertations and theses and the extent of their coverage by the various databases. A comparison of two databases concerned with this "format" material is not completely reassuring, while the survey of the individual databases cited did provide useful information for the online searcher and contributes to reducing the uncertainty of the situation.

THE PROBLEM

That uncomfortable feeling of uncertainty is back. As an academic librarian, information broker, or online searcher in a corporate structure you have just completed a computerized search. The citations are relevant but include several references to dissertations and/or theses. Does that mean you don't have to search *Dissertation Abstracts Online*? Questions nag. When did the database just searched start to include dissertations/theses? Were citations to dissertations added retrospectively? What about foreign dissertations? Are they included? If so, which countries? Just what percentage of the database is dissertations? The directory *Computer-Readable Databases* does indicate percentages but only in combinations of formats. What were the criteria used for selection of dissertations? Who assigned the subject headings/descriptors? The author, database personnel, or others? Was a thesaurus used? If so, which one?

THE SEARCH FOR ANSWERS

A search by document type (dt = theses? or dt = dissertation? or dt = doctoral?) of

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