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# Where the streets have no name: how library users get lost in the stacks

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## ABSTRACT

There is clear evidence that library users often get lost looking for physical items, however there has been little research on how library users search the shelves or what causes them to fail to find what they are looking for. This paper presents a preliminary investigation into library users' difficulties searching the shelves.

## Categories and Subject Descriptors

H.3 m [Information systems]: Information storage and retrieval – *miscellaneous*.

## General Terms

Design, Human Factors.

## Keywords

Libraries, information seeking, library users, shelving, Dewey decimal, classification schemes

## 1. INTRODUCTION

Unlike digital collections, physical items in a library cannot be rearranged to accommodate individual users' information needs; nor is there any ready analogue to keyword searching, where the most useful items are often readily apparent.

How best to organize collections in a library is a fraught question; most libraries by default use classification schemes (such as the Dewey decimal scheme) that attempt to create subject-browsable collections while at the same time specifying a unique location for each item [1]. While these are noble ideals, these schemes fail users by being arcane [2] and not relating well to the metadata users typically use when searching for known items [3]. In addition to the problems with classification schemes, library catalogues—the means by which users access classification schemes—are notoriously unusable [4, 5]; physical library layouts

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may require special locations for items of a certain type or size [6], and items may or may not be physically present in the library at the correct location when users need them [7]. Given all these obstacles, it is not surprising that library users struggle to find physical items in libraries [8].

A number of solutions to users' problems with library shelving have been trialed, from low-tech solutions including rearranging the shelves [9] and providing better signage [10] through to high-tech approaches for example using wayfinding devices [11]. Similarly, there are numerous studies of how people use libraries (for example [7, 12]) and consult librarians (for example [13, 14]). Despite this research interest in libraries, we found only one study that investigated library users' interactions with shelves: a 1995 study of 23 children in New Zealand [15] found the majority were neither competent nor comfortable visually searching the shelves.

The work reported in this paper is a preliminary study of what goes wrong when library users are looking for physical items at Swinburne University of Technology. Swinburne is a dual-sector institution (offering university and polytechnic level education) with libraries on all of its 5 main campuses. All of the libraries have some special collections due to book size or some other special characteristic (such as Australian literature) and separate audiovisual and high-use collections from the main collection. The Dewey decimal classification scheme is used for all books except recreational reading (shelved alphabetically by author). Like most libraries, items are shelved in bays which group together to form shelf meaning shelves cannot be scanned directly across. On three of the five main campuses books are housed over more than one floor of the library. Swinburne's high international student population means the jargon in Dewey and unfamiliarity with Dewey (Dewey is popular in Australia, but other classification schemes, for example Library of Congress, are used elsewhere) may contribute to the difficulties our users face.

Section 2 of this paper describes the methodology used in our study, Section 3 gives results and Section 4 presents discussion and conclusions.

## 2. METHODOLOGY

To get an initial picture of exactly what kind of problems library users face when searching for physical items, we asked shelving staff to collect the questions they were asked in a three month period at the end of the academic year. Shelving staff are highly visible in the library and available at the point of need when users get lost; this makes them ideally placed for contextual data

collection about users' problems. To facilitate data collection we provided data sheets that had spaces for campus, date, whether or not the user already had a Dewey decimal number and a free-text description of the user's problem or question. Participation in data collection was voluntary, so the queries collected are not a universal sample; however issues staff reported were fairly consistent, and thus are probably representative.

### 3. RESULTS

Over the three months that this study ran, 183 enquiries, problems and questions were recorded by shelving staff; these enquiries were spread across the five main Swinburne campuses in Australia. 54% of the library users who consulted shelving staff in this study already had a Dewey decimal number. In the free-text enquiry field, some staff recorded problem or enquiry, some recorded assistance offered, and some recorded both.

We used a grounded theory approach to analyse the encounters recorded by shelving staff [16]; three main categories emerged: problems (See Section 4.1), questions (See Section 4.2), and assistance offered (See Section 4.3). Staff also recorded considerable information about the metadata library users already knew about the item they wanted, this is discussed in Section 4.4.

#### 3.1 Problems

In total, 143 problems were recorded in shelving staff's interactions with 122 users.

15 users who approached shelving staff had problems with the catalogue: 13 did not know how to use the catalogue, and 2 did know how to use it but had some problem with it. Of those who did not know how to use the catalogue, many had simply never used it:

*"Students' second time in library, have never used the catalogue but know how dewey [sic] works"*

Although some had and had difficulties with it:

*"knows about call numbers but not how to get them from the catalogue"*

Both of the users who knew how to use the catalogue but had problems with it experienced terminology difficulty, one with her search terms (*"she did not know what keywords to enter to get resources on childcare"*) and the other with the interface itself (*"asked me what terms in-process, on order etc. mean in the catalogue"*). Since this study, we have replaced our catalogue with a significantly more usable system, which may reduce the number of item-finding problems library users experience as a result of the catalogue.

35 of the problems reported were Dewey related. 22 users did not understand the Dewey scheme:

*"Misinterpreted the Dewey number, searching for 005.86 in the 005.1-005.113 as they thought 86 is fall in between [sic] 1-113".*

*"Needed an explanation of call nos. Student was stubbornly browsing the entire collection!"*

*"Needed a book in the 800s, wondering how to get to 8th floor"*

The remainder of users with Dewey problems had written down incorrect or incomplete Dewey numbers. Some of these were a genuine mistake:

*"Dewey no. was wrong, student copied no. from catalogue, wrote 303.230994 which is 203...so she couldn't find it"*

But some further reflect a lack of understanding of the Dewey:

*"He hadn't written down anything after the decimal point, so he was wandering around the 372s hoping something would jump out at him"*

Some users even proposed shelving arrangements that they expected instead of Dewey decimal classification (*"Student was quite surprised to find books were not in alphabetical order"*). Given that the only way to find specific items at Swinburne Library is to use the Dewey decimal system, it is of considerable concern that a significant number of users do not understand it.

A total of 32 problems occurred because the patron was looking in the wrong place for something. In 8 cases the patron was simply in the wrong place:

*"item down the other end of [level] 4"*

*"they were searching for books on the wrong campus"*

The remainder of location problems were caused by special collections. Sometimes these collections are based on the format of the item:

*"searching for a DVD, he didn't think they were kept separately"*

Sometimes on the item's high-use status

*"Student asked me to help her find a book. When I couldn't locate it she told me it was a 2-hour loan, and I explained that 2 hour loans are kept in reserve room next to service desk on level 2"*

And sometimes on some other special property:

*"didn't realize that the F on the call number stood for folios [large books, shelved separately] and was looking in the general collection"*

*"asked where the Australian literature was, as she had not noticed the A in the call number"*

Occasionally users were even looking in a special collection for items shelved in the general collection (*"he was looking books [sic] only in the reserve section"*). It is clear that special collections are a source of some confusion, and that where possible items of the same type should be shelved together in a single collection.

40 problems related specifically to finding items on the shelf. Of those 10 were because the item was not on the shelf, either because it was missing:

*"although [the catalogue] lists status as 'in' book is not on shelf. Checked trolleys and item is not there either"*

Or because the item was in the process of being re-shelved:

*"hadn't thought to check trolleys, so I showed him other places to look when book is not on shelf"*

Of the remaining problems, some were because the user just couldn't see the book:

*"student right in front of book but still couldn't see it"*

Some were because some parts of our collection are very large:

*"Couldn't find the book as she was looking in the 658s when she should have been looking in the 658.83015118 area"*

And some were because users genuinely did not understand how we arranged the shelves:

*“Didn’t know how bays worked, thought shelves ran straight across”*

A significant number of the problems our users experienced related to how we shelve books; how users search the shelves is a fertile area for further investigation.

In addition to the problems already described, users experienced a number of other problems including item format problems (*“didn’t know if it was a DVD or a video”*); availability problems (*“patron didn’t understand that checked out means the book isn’t here”*); having vague or incomplete information about the item of interest (*“information too vague”*); and being completely lost (*“student has no idea where to go or how to start”*). Each of these problem types occurred fewer than 6 times, though, and as such are less likely to affect a significant number of users.

### 3.2 Questions asked

30 users asked shelving staff a total of 36 questions. The majority of these questions were directional, however shelving staff were also asked general questions about library use.

There were two types of directional queries asked of shelving staff: general:

*“student wanted to know where catalogue computer was”*

And very specific:

*“where are the books 654.72?”*

*“wanted to be pointed in the direction of art shows Didn’t have time to use the catalogue, just wanted a general area to browse”*

The general directional queries do not reflect the problems library users have finding materials, but the specific queries are very instructive; it is evident that at least some library users find the catalogue burdensome, and that others do not understand how to translate a call number to a shelf location, or how to use a call number to find a useful location and begin browsing.

The general library questions that shelving staff answered covered a wide range of topics to do with library use, including borrowing: (*“They thought they couldn’t borrow recreational material”*), photocopying (*“wanted to know how to use photocopier”*) and how to find alternative items for their search (*“helped him find another edition of the textbook”*).

### 3.3 Assistance offered

102 types of assistance were offered to 64 library users.

The catalogue was one area where considerable assistance was offered: in 19 instances demonstrations and instruction were provided, and in 22 cases shelving staff used the catalogue on behalf of library patrons. Demonstrations tended to occur when the user was very new to the library (*“First visit to library, had no idea how to use the catalogue so I showed him how to use it”*) or when an advanced feature was needed, for example limiting to books on a specific campus (*“showed her how to display only books at Wantirna”*)

Catalogue use on behalf of library users (and assistance with the catalogue) were generally described more briefly (*“Helped her search for titles”*). Sometimes though, use on behalf of a library user happened when they had vague or incorrect metadata

(*“checked the call number for her, turns out it was wrong”*). Teaching library users about the catalogue is generally the purview of reference librarians and disruptive to the work of shelving staff; nonetheless shelving staff are available at the point of need and often go beyond their recognised duties to help users.

Assistance with the shelves was also mentioned frequently; like help with the catalogue, help with the shelves was given in two different ways: as an explanation or demonstration (11 instances):

*“explained about the bays and row numbers”*

*“student browsing reserve room by Dewey, explained that books are ordered by family name of the person who requested them”*.

And as more directed assistance (30 instances):

*“showed her the area for browsing, she found some books and was happy”*

While it seems like dramatically more directed assistance is being provided at the shelves than with the catalogue, this is a reflection of the nature of the problems users face: proficient shelf users can be standing in front of a book and still not see it (and thus need directed assistance), where this is never the case with the catalogue—items on screen are never filed in an incorrect location, nor do they disappear between other items, for example.

For 24 users, shelving staff provided help with both the catalogue and the shelves, meaning an alarming number of users needed help with both of the major steps in locating a book or other physical item. Clearly our interface to physical items fails some users dramatically, and is in dire need of improvement.

In addition to the assistance with the shelves and the catalogue, shelving staff provided assistance with placing holds (reserving books) (*“I also showed them how to place a hold”*) explained the Dewey decimal system (*“had no clue about Dewey so I gave them a quick explanation”*), referred users to reference for more complex queries (*“convinced it had to be a specific book, so I referred him to [the] reference [desk]”*) and provided other more general types of information (*“I showed him how to use his library barcode and pin”*).

### 3.4 Known metadata

Shelving staff reported library users already having a variety of metadata about the items they sought, from the very specific (including call number and title), to the very vague (*“All he knew was it was a tourism book with a picture of Uluru on the cover”*). Metadata types users mentioned during their consultations with shelving staff included title (29 users) visual information (4 users) and course-related information about required readings (8 users). 29 users also mentioned subject; but they were generally browsing for any useful items rather than searching for known items.

When we compare users who had call numbers with users who had other metadata, we discover 49 users were searching the shelves without a call number, and 24 of these were not subject browsing, but searching for a specific item. This study gives us no insight into the search strategies employed by those 24 users, but we do know that without assistance they were unlikely to succeed, because call numbers are the key to finding known items.

## 4. DISCUSSION AND CONCLUSIONS

It is clear from this study that, in stark contrast to the results of materials availability studies (for example [17]) library users do fail to find what they are looking for. They struggle with every part of the process: the catalogue confounds them, Dewey is incomprehensible and the shelves mystify them. The multifaceted nature of the problem means that no single approach, including catalogue usability [5], signage [10] or computer-assisted wayfinding [11] can solve the problem. Similarly, the information literacy approach (where users are trained by librarians to interact with library systems) will not work; it will only reach the rare users who use library training [18].

Libraries are competing with the convenience of information that is readily and conveniently available online; students and academics alike turn to Google first [4, 19, 20]. Libraries are respected for the reliability of their information [8], and some users prefer physical materials [7], but to keep up in a digital age libraries must make their physical collections more user-friendly if they do not want their users to give up entirely [14] or satisfice with more easily accessible information [21].

This study demonstrates some of the problems users face when searching libraries' physical collections and suggests ways libraries can ameliorate them: catalogue usability is important; special collections cause numerous problems for users and should not be created without a compelling reason, and subject browsing should be well supported, both because users want it and because browsing is a natural part of the information seeking process [22]. These findings are preliminary, however, and further work is needed to determine how users think when they approach the shelves and how they conceptualise the relationship between the components used when searching for physical items. Understanding these issues would contribute considerably to designing usable libraries, particularly with respect to their physical collections.

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