

# A usability study of the library catalogue at Monash University Library

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**Abstract:**

*During 2004, Monash University Library undertook a usability study of its library catalogue. A number of things were tested including terminology, search behaviour, search types, users' ability to deal with mixed results, preferred interface and layout, including selection and formatting of records, as well as tasks to do with lending and requesting of items. Methodology and outcomes are discussed in the paper, as well as information relating to programs and documents used in the study.*

## Usability

The first question of a usability study is to work through exactly what usability involves. Many people would define usability as a study of whether a piece of software or user interface, is actually usable by users. This may seem like a basic concept, but when all the issues are teased out, it can become very complex and some time needs to be taken to decide what areas are of concern and what important points need to be tested with users.

User testing can take many forms and need not necessarily be confined to the traditional task-based, sit down and ‘try it out’ methodology. Often several different methods are combined to give a more complete picture of the user experience. Dey Alexander, Monash University’s usability expert, maintains an excellent annotated bibliography of resources (Alexander 2005) relating to user testing. This site includes articles describing the various methods used in this study including paper prototyping, task analysis, and competitive analysis.

A very appealing phrase is “don’t make me think” (Krug 2000). This phrase has been quoted many times in relation to usability of web sites, but it does highlight the important fact that users don’t have a lot of time when searching catalogues or web sites. They should not have to learn a whole new set of terms and concepts just to quickly find some information in the library catalogue.

A good article which covers usability testing of library catalogues is Feldman’s *The key to online catalogues that work?* (1999). Under the heading ‘what issues to test’ is a short list of the basic issues which any usability test should cover. In the ‘user studies’ area of the CLIR report by Denise Troll Covey (2002), the work done in our study fits quite well with other user studies done by libraries in the USA.

Apart from a small amount of consideration during the examination of the layout and visual design, the issue of accessibility was not specifically examined in this study. It was not within the scope of the current project and improving accessibility is severely limited by how the Voyager software is written. Good accessibility design was implemented whenever the software allowed customisation to conform with accessibility guidelines. For those wishing to examine this topic in more detail in relation to the Voyager system, the article by Axtel and Dixon (2002) is a good one to follow up.

Documents relating to the Monash University Library’s catalogue study (2005) are available on the library’s web site.

## The library catalogue

In 1998, Monash University Library installed Endeavor’s Voyager system. Since then most decisions about functionality, options, displays, labelling, design, etc have been made by library staff. Although these decisions took account of user feedback, the library decided to implement a more rigorous and formal user-centred approach to the design of the library catalogue.

Because the scope of the project was potentially extremely large, and would involve a number of stakeholders, it was decided to employ a project-based methodology. The project was directed and run from the library’s Information Systems Division, with Stephanie Foott being the project manager, and Janette Burke, Director of Information Systems, being the project sponsor.

A usability reference group was formed to plan and monitor the project. This group comprised six library staff from different areas of the organisation including Client Services, Information Systems and Information Resources. The group was deliberately kept small and operated as a working party, ensuring that issues relating to the study were resolved as quickly as possible and with least amount of debate. The most important goal was to ensure we kept the project focused on the tasks at hand and to ensure that the user-centred approach was maintained, that is, that users would drive the results, rather than vocal lobby groups within the library.

## **Methodology**

Formal user feedback already existed in the form of comments received through the biennial customer survey and emails to the library's inquiry/feedback service. These were analysed and categorised according to the underlying issues. This type of feedback can seem useful since it directly represents the voice of the user; however in the past when we had analysed similar user feedback, we found that many users don't distinguish between the library's content and services like databases and electronic journals which are accessed via the library catalogue, but provided by other organisations. This was also the case in this study and not unexpectedly, after examination, much of this feedback related to issues outside our control.

Library staff were also invited to submit issues they felt needed to be resolved. These issues were drawn from years of experience answering user queries at service points and observing user behaviour in classes. From this and the user feedback, a list of possible issues to test was drawn up. These were ranked first according to their importance and then more importantly, according to their viability in being able to be researched, measured and tested in a usability study.

The study aimed to make the catalogue more intuitive by improving the terminology and, within the limits of the software, improving the layout and aesthetic aspects of the design. We concentrated on the two basic aspects of the finding/retrieval process:

- initiating and modifying searches
- interpreting and using the results.

We also wanted to test several new features which were being introduced:

- a single hold service,
- a directory-based LDAP login, and
- a new inter library loan module.

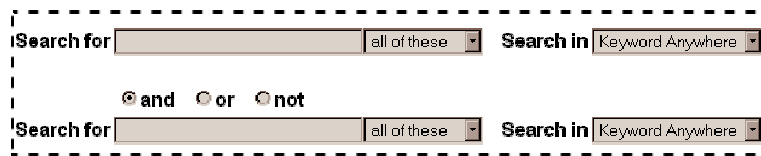
Four methods were selected for collecting the data:

- examination of search log files (carried out by library staff).
- analysis of competitors using the same library software (to be carried out by library staff).
- task-based user evaluation (to be carried out by the university's usability team).
- user interview (to be included as part of the task-based usability evaluation coordinated by the university's usability team).

## **Search log analysis**

The Voyager system provides two main search interfaces. The first is a guided keyword search consisting of a text entry box, with dropdown boxes used to select the way the words are to be combined (and, or, phrase) and the fields in which the terms must appear. Multiple search lines can be combined with Boolean operators (and, or not). Monash had labelled this

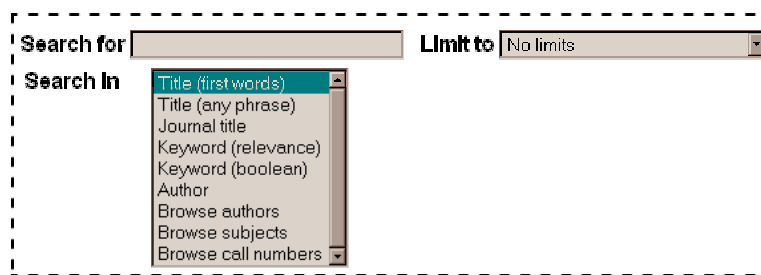
search 'basic' with the defaults set to 'combine words with and' and 'search all fields'. Fifteen field choices were included.



The image shows a basic search interface with two identical search rows. Each row has a 'Search for' text input field, a dropdown menu set to 'all of these', and a 'Search in' dropdown menu set to 'Keyword Anywhere'. Between the two rows, there are three radio buttons labeled 'and', 'or', and 'not', with 'and' being selected.

Figure 1: Basic search interface

The second interface provides a text entry box and the ability to choose from a list of search types. The system provides a wide range of search types, which can be further extended by specifying if the search should be performed as a browse or if the results should be relevance ranked. Monash had labelled this search 'advanced', with the default set to 'title'. Nine different search types were provided



The image shows an advanced search interface. It features a 'Search for' text input field, a 'Limit to' dropdown menu set to 'No limits', and a 'Search In' dropdown menu. The 'Search In' menu is open, showing a list of search types: 'Title (first words)', 'Title (any phrase)', 'Journal title', 'Keyword (relevance)', 'Keyword (boolean)', 'Author', 'Browse authors', 'Browse subjects', and 'Browse call numbers'.

Figure 2: Advanced search interface

A third method of searching is provided through hyperlinked words in the records. Clicking the link performs a new search using that term.

Limits (year, location, type, language, etc) can be applied to all but browse searches. Once 'turned on' they remain in force until the user specifically clears them.

The log files for a two-month period, May/June 2004, were examined. This task involved formulating SQL queries against the Oracle tables, and writing software which would easily import the log files and produce Excel spreadsheets showing the break-down of usage statistics within each search and limit category. The information returned included: the number of searches per day, week, with the percentage of each search type used, the number of hits, the percentage which had no hits, how many advanced/basic searches there were, which limits and search terms were used. One of the benefits of writing a search log analysis program was to enable us to run this on a regular basis once the usage study was finished and the new interface deployed.

This purely quantitative analysis concentrating on the types of searchers used and the limits applied. Its purpose was to reveal which search options and limits were being used. Later user testing would examine why particular choices were made.

### Competitor analysis

Although the Voyager community regularly shares ideas and information through discussion lists and presentations at user meetings, Monash had not done a formal competitor analysis since the system was first installed.

Sixty other libraries using the Voyager software were examined. Terminology, labels and options were tabulated. These were used as a resource when redesigning the first iteration of the catalogue to be tested.

Voyager ships with default settings, and many libraries had not varied far from these, but a few libraries had done extensive customisation. In the basic keyword search, most libraries provided around 10 searchable fields with the maximum 21. There was a common core that included: all, author, title, subject, ISBN/ISSN. Beyond this, the options ranged from general fields such as series and publisher, to the very detailed such as subject-topical, subject-genre/form, subject-uncontrolled. The number of advanced search options provided ranged between 6 and 14, with most libraries providing 7 or 8. However, the types of searches provided showed a wide variation in both type and name, reflecting the extensive range the Voyager system provides.

A bonus result of the competitor analysis was the discovery of libraries which had extended Voyager's shipped functionality with external scripts and programs. These are now being investigated in more detail.

Several libraries had also recently done usability studies and the results of these were examined. In general however, these studies, like ours, focused on redesigning the catalogue interface to suit a particular clientele and a specific collection. The results were of limited value for our situation.

## User testing

The major part of the study was a series of usability tests to investigate specific concerns and through a process of iterative design and evaluation to provide a new library catalogue interface.

Four rounds of testing were planned, with each round involving 10 participants. The first two rounds used paper prototypes. The final two rounds were to be conducted on a live development system. Paper prototyping was selected for the first rounds, since it allowed us to easily make and test changes without the need to create new graphics or to edit the numerous configuration files needed to run the catalogue. There were also some changes that could not be done without affecting the 'real' catalogue. Without paper prototyping, we would not have been able to test these changes.

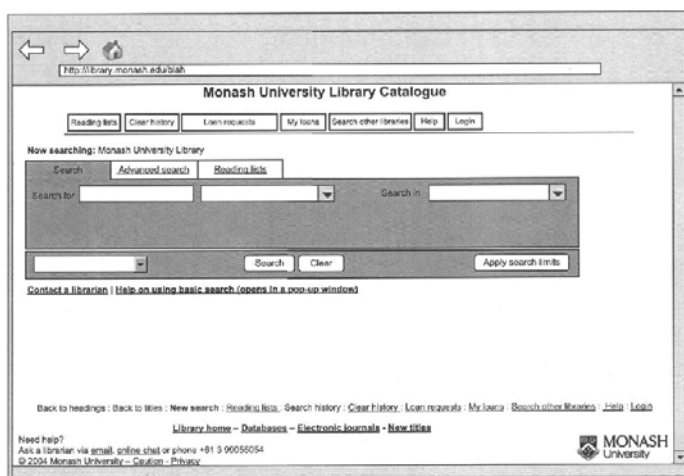


Figure 3: Paper prototype of the library catalogue interface

The target audience was academic staff and students and an attempt was made to recruit a mix of both casual and heavy users of the catalogue. Within the student group, the aim was also to recruit a mix of local and international, undergraduate, postgraduate coursework and postgraduate research. In the end, we were unable to recruit true novice users; the least experienced participants used the catalogue two or three times a month, while most participants reported using it at least weekly.

The list of issues the library had earlier identified was used to develop tasks and interview questions that would address these concerns. Many of the lower priority concerns had to be dropped, because they could not be covered in the two hours allocated for each session. These will be followed up in future studies. The entire test was scripted and after several rounds of pilots, the questions and tasks were further refined. Eventually nine interview questions and seven tasks were included. The specific concerns were mapped to each task and/or question. (See Appendix 1)

An iterative design process was used. After each round of tests, tasks that were causing problems were examined. Using the comments participants made while trying to perform the task, changes were made to the interface to try to correct the problem. These changes were then tested in the next round. Four rounds of testing were originally proposed. However after round three, the outstanding issues related either to things that couldn't be changed because of software constraints or to user misunderstandings that couldn't be solved by changes to the interface. The fourth round was therefore cancelled.

### **Session details**

Tests were facilitated by the university's usability expert. In the first two rounds a second person acted as the computer and manipulated the paper prototypes. In the third round, this person acted as a note taker. All tests were videoed and in round one, library staff were present as observers. This proved to be too distracting, particularly for the participant, and so in subsequent rounds the library relied on the facilitator's report and the video to assess the results.

Participants received a short, scripted verbal orientation explaining the purpose of the usability test. They were advised that the research was focused on the design of the library catalogue interface and not their skills or knowledge of the catalogue. Participants were then asked to read and sign a consent form and to complete a background questionnaire. In the first two rounds of testing, where paper prototypes of the catalogue were used, a demonstration of how to interact with the prototypes was provided.

Participants were then told the number of tasks and questions involved in the test and were introduced to the 'think aloud' protocol. This protocol was used to enable the test facilitator to get a better understanding of participants' thought processes as they worked through assigned tasks.

The performance evaluation consisted of a series of tasks that participants attempted to complete. Each task was printed and the facilitator asked the participant to read the task aloud. This strategy was employed to assist the participant to become accustomed to verbalising.

After all tasks were completed, participants were asked a series of questions designed to explore usability concerns that were not able to be investigated through tasks. Participants

were also encouraged to ask questions and provide additional feedback on any aspect of the catalogue.

## **Changes made**

The primary purpose of the study was to redesign the library catalogue interface using usability principles and then to validate the changes with user testing. By the end of round three, most changes were working well, and the new LDAP login was also accepted with few problems.

Some apparently simple label changes had made a huge impact. As librarians, we had tried to label options accurately. A simple terminology change from ‘my details’ (a more accurate description of the range of functions behind that button) to ‘my loans’ (what most people use this option for) meant we could also remove the ‘renew loans’ button. This extra option, which went to the same screen as ‘my details’, had been added several years ago because users constantly asked ‘where do I go to renew my loans’.

## **Simplifying the interface**

Efficiently using a library catalogue is a different process to using a web search engine like Google. The amount of searchable data (ie text) is far less than is available to web search engines; web search engines use the full text of an item, catalogue search engines use a brief summary of the item’s content. In addition, catalogue searches rely heavily on controlled vocabularies and highly structured content in contrast to the unstructured, free text content of the web. Each has its own challenges in terms of discovering relevant content, but as web searching becomes the norm for many users, catalogue searching becomes a more unfamiliar process that requires additional assistance.

Therefore, the general thrust of many of the design changes was to reduce the cognitive load on users and help them focus on what was essential. Largely this was done by simplifying the look of the pages and reducing the number of options, sometimes at the expense of convenience. A typical example was the removal of options that were provided twice – at the top of the screen and again at the bottom. When changing options, like returning to the results list or performing a new search, users tended to click the back button even if this meant working back through several screens. Even those who used the button bar options, scrolled back to the top of the page even though the option was right in front of them at the bottom of the screen. The convenience of also having these options at the bottom of the screen was not being used. On the other hand, removing these additional options helped to un-clutter the appearance of the screen. Other ‘convenience’ options that were removed were links to other library services and information, that is, those that are not part of the catalogue, but on the library’s web sites. These extra links have been reduced to the three most heavily used resource lists: databases, electronic journal, new titles.

Another successful strategy used to simplify the look of search screens was to remove help text from the screens. This is clearly illustrated in figure 5. Participants in the study made little attempt to use help, even when several attempts to complete the task failed. Experience from library staff assisting users at service points also confirmed that users failed to use the correct search syntax (particularly with advanced search) even though the instructions were right in front of them on the search screen. This reinforces numerous other studies that have shown that when faced with a text entry box, people tend to focus on entering terms, rather than taking the time to read how those terms should be entered. Brief tips are now provided in a popup window. For those who do like to read help first, the button that provides access to

the full help pages was given a different graphic treatment to make it stand out from the rest of the options.

Overall, we were satisfied that the various strategies for simplifying the screens had worked well. It is not possible to measure exactly how much impact each change has made, however we have confirmation that the total effect has made some improvement. Several participants commented ‘that’s new’ when referring to options that had always been there, but had presumably been lost to that user in the previous screen clutter. The reduced number of buttons and the cleaner look of the new search interface can be seen in figure 5.

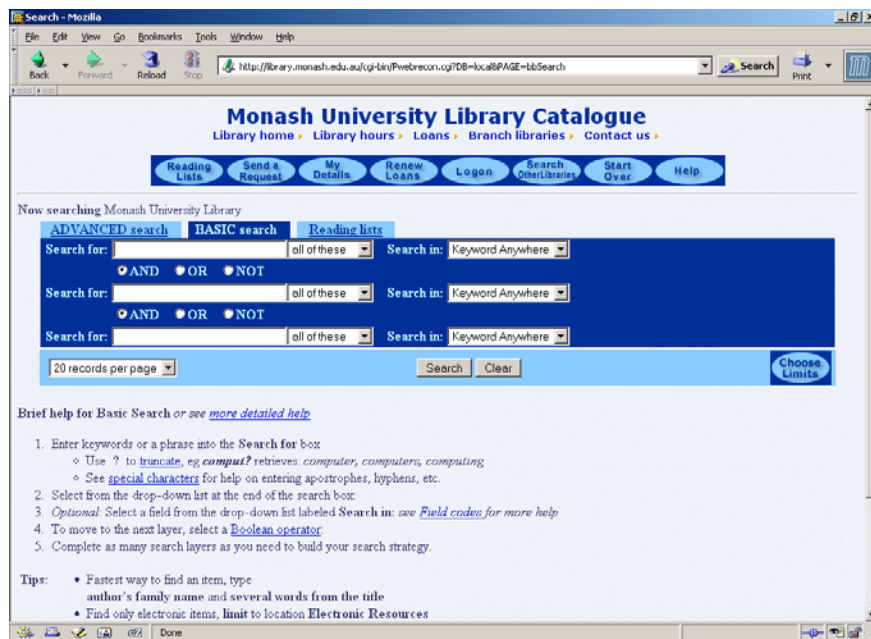


Figure 4: The Library Catalogue’s Basic Search screen before usability testing

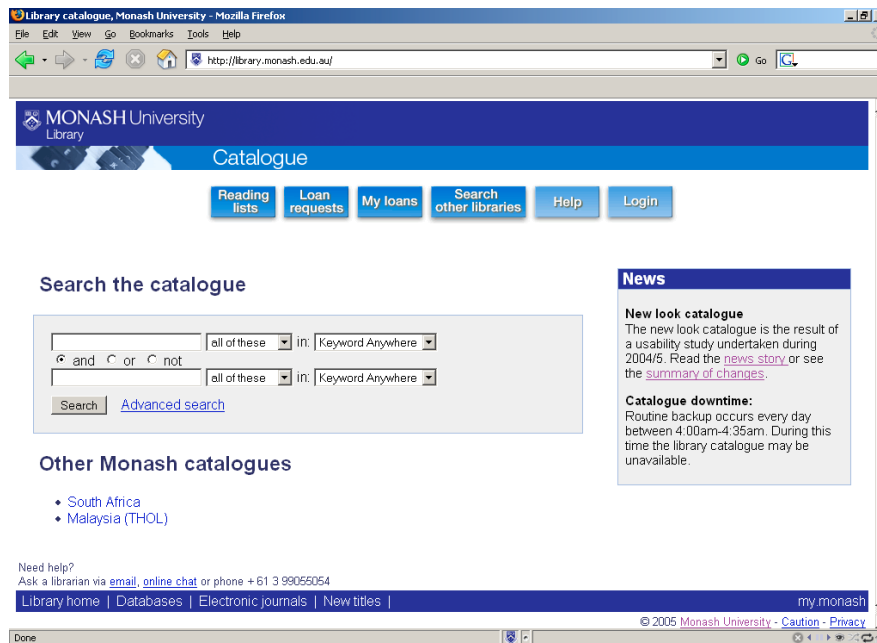


Figure 5: The Library Catalogue front screen after usability testing



## **Searching**

Most participants had few problems with known item searching, but many struggled when faced with a topic and in particular when the search found too few/too many items. Server log analysis had shown that users do make use of different search types. What the user testing showed however was that, although they did change search types for different queries, their choices were often either unnecessary or, of more concern, inappropriate.

Very few used the limit option during testing, but most reported having used limits in the past, most commonly location (limiting to specific library) and date. This is confirmed from the search log analysis. The proportion of searches done using more specialised limits such as videos, music, children's fiction, etc, is very small (less than 2%). Although usage might be small, we decided to retain all of these limits since, for specific purpose searches, they are essential. The one anomaly was the use of the electronic resource limit. Some librarians had suggested that we should promote this option more widely. Search log analysis reported it is more than 20% of all limits used; however study participants indicated it was not particularly important to them. At this point, we have decided not to try anything further to make this option more prominent. The whole issue of how users approach finding electronic documents needs a separate study of its own.

Search log analysis revealed that only 2% of searches used the hyperlinks in the records. In an attempt to encourage greater use of these we introduced a fourth record view labelled 'find more like this'. This view contains only the hyperlink searches. Although none of the participants used this option when trying to find more items, all easily understood what it meant. We decided to retain it and will monitor the search logs to see if it makes a difference to the proportion of hyperlink searches.

### **Basic vs advanced**

Librarians knew that the basic search is the easiest to use, particularly for novices; whereas the advanced tab requires a degree of skill because each search type uses different syntax and provides different result sets (browse, relevance ranked, index headings, etc). Search logs revealed that only a little over half the searches done on the catalogue use basic search. Anecdotal evidence suggested that users were daunted by the appearance of the basic search screen, with its multiple lines and multiple dropdowns. In fact, many users had suggested that we had wrongly labelled these searches and 'advanced' should be called basic or simple. One aim of the study was to find ways to encourage users to use basic search. A screen shot of the basic search interface is shown in figure 4.

Search log analysis also revealed that a significant number of basic searches used at least two search lines. However in the early rounds of testing it was noted that most participants who did this could have performed the search just as effectively using one line. For example, they entered author on one line and title on the next, changing the search field each time. This search can be done by simply entering author and title keywords on one line and leaving the defaults ('all of these' and 'keyword anywhere').

In the third round, we reduced basic search to a single line to give it a simpler, more Google-like feel. Although participants coped with the change, some were not comfortable with such a drastic reduction in options. It was also pointed out that to combine two phrases you now needed to use a complex command line search. So a compromise was reached and a two-line search has been implemented. Of more significance in directing users towards the basic search was to place this search box on the home page itself, rather than behind a button.

We also reduced the number of options in the dropdowns. Search log analysis had shown some of these were little used and participant interviews confirmed this. These specialist searches (electronic descriptors, contents notes, publication date, material type, etc) are still available for experts from the command line or via limits, but the list of choices in the dropdown is now less daunting.

Several of the participants when explaining why they used advanced, commented that they did so because the term ‘basic’ indicated that it was for novices and they were beyond that. So another design change made to encourage users to try basic search was to rename it simply ‘search’.

### Finding journal articles

All participants successfully located the journal, although some needed several attempts. However many had problems interpreting the catalogue record, in particular reading holdings accurately. These are complex, particularly in a multi-campus system like Monash, so it is not surprising that users struggle to make sense of them. This is compounded by the layout constraints of the Voyager system; holdings information is presented under the bibliographic record, with a separate holding record for each location.

Location:	Electronic Resources
Call Number:	Internet
Notes:	Available in HTML and PDF formats. Acrobat Reader required to view/print full text articles
Number of Items:	
This Location has:	v. 117 (1996) to v. 172 (2002)
Linked Resources:	<a href="http://www.lib.monash.edu.au/databases/cgi-bin/fsecov2.scr?journal=0001-8708">Full text available via OCLC FirstSearch Electronic CollectionsOnline (restricted access)</a> <a href="http://www.lib.monash.edu.au/databases/cgi-bin/fsecov2.scr?journal=0001-8708">http://www.lib.monash.edu.au/databases/cgi-bin/fsecov2.scr?journal=0001-8708</a>
Location:	Electronic Resources
Call Number:	Internet
Notes:	Available in PDF format. Acrobat reader required to view/print full text articles
Number of Items:	
This Location has:	v. 1 (1965) to present
Linked Resources:	Full text available online via ScienceDirect (restricted access)
Location:	Hargrave-Andrew Library Serials
Call Number:	510.5 A244
Number of Items:	37
Status:	available
This Location has:	v.1 (1961) to v.117 (1992) ; lacks v.4

Figure 6: Standard Voyager holdings records

Although we have not been able to change this layout for print serials, for electronic we have abandoned holdings records and now all information is contained in the MARC 856 tag of the bibliographic record.

Linked Resources:	<a href="#">Full text available from Business Source Premier: 01/01/1996 to 1 year ago</a> <a href="#">Full text available from ProQuest 5000 International: 01/01/2002 to 1 year ago</a> <a href="#">Full text available from Springer-Verlag LINK: 01/01/1996 to present</a>
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Figure 7: Holding information displayed in the 856 tag

This change was not ready to be tested during the study, but subsequent feedback indicates that users find this less confusing. It is interesting to note that several study participants mentioned they would not usually try to find a journal through the catalogue; they preferred to use the lists of electronic journals provided on the web site. Not surprisingly, this is how the holdings are presented on those web pages.

This raised another issue of concern. Although a large proportion of journals is now electronic, there is still a significant number that are not (or where there is embargo on the current year). If people use the ejournal web pages exclusively, they may miss the fact that we have the item in the print collection. We are now looking at the design of the ejournal web site to find ways to encourage users to do a catalogue search, before they decide we don't have the article they want.

### **Record views**

In addition to testing the new 'find more like this' view, we were interested to know if users were happy with the level of detail on the brief view. This view includes the full holdings records, but only includes enough bibliographic information to identify the item (author, title, edition and publishing details). From time to time users and librarians had suggested adding extra bibliographic information. We were also interested to know whether users switched views to see the more detailed information on the full record.

In general, participants were happy with the brief view. Some did suggest other fields, but none thought that adding them was particularly important. Some also pointed out that adding more information would push the holdings further down the screen, while others said they would simply switch to the full record when they needed more detail. This changing to the full record view was also observed during testing, particularly when participants were trying to select relevant records. Given that users are comfortable switching views, we decided not to clutter the brief view with extra fields.

### **Requests**

Two major changes had been made to requests and part of this study was to test the success of these. The first change was to test the new 'hold' service. Previously when users wanted an item that was unavailable they had to choose between three options depending on the status of the item: 'recall' (for items on loan), 'intercampus loan' (for items on the shelves at another library) and 'request cataloguing' (for items received, but not yet catalogued).

Users frequently chose the wrong option and were frustrated with the delays this caused. From the user's point of view, the new service combined all three into a single service, although the backend processing for each is still quite different. While the term 'hold' was not well understood (and no alternate suggestions were any better), most participants adjusted quickly to the change, and successfully completed the task because it was now the only obvious option. It seems superfluous to state this, but often the greatest improvement in usability comes from changing library policies and procedures to reduce complexity for user, rather than from redesigning the interface or changing the terminology. Of course simplifying complexity for the user often comes at the expense of increasing complexity for library staff.

On the other hand, the introduction of document delivery via the catalogue required five new request options. Even by the end of round three after numerous adjustments to terminology, this was still causing confusion. Small improvements were made to the forms by combining or removing options, even if this meant that library staff needed to do more backend processing. Extrapolating from our experience with the hold request, we concluded that the biggest usability improvement we could make would be to try to reduce the number of choices required. We are currently looking at ways we can modify the system to make this possible.

A minor outcome of the study was the discovery that although users can pre-populate the form, if they first find the item in the catalogue, all preferred the extra effort of typing in the item details, rather than the extra effort of searching first. This behaviour has been confirmed since the service was implemented and few requests are received where the item details have been populated by the system.

## **Software constraints**

The Voyager library catalogue is highly customisable in terms of options, labels, and colours. However, it, like many catalogues, has limited ability to significantly alter screen layout, in particular the placement of options. This is a major obstacle to providing a system that meets basic usability requirements. The problem with the layout of the holdings records has already been mentioned. Other examples include the 'limits' button, which is at the bottom of the search screen. The natural tendency is to fill in the search terms and then select limits. However, selecting limits must be done first, because the act of selecting limits clears the search screen. Several of the participants complained of this behaviour. Another layout problem is the 'request' button, which is located at the top of the screen, when many users expect to see it at the point of need, that is, near the information that the item is unavailable.

Several participants mentioned they would like to refine their searches. This option is available, albeit in a slightly clunky way. The 'search history' button retrieves a list of recent searches; from there the user can select a previous search to edit. A more logical approach from the user's point of view would be to also provide a 'search in these results' option.

Another issue that caused problems was the method used to re-sort lists of titles. These results are presented in a table. A common convention on the web is to re-sort tabular information by click the column heading. Instead, Voyager uses a dropdown box, from which the user chooses the re-sort option. This is compounded by the fact that the dropdown box is blank. The options only appear when the arrow is clicked. Some participants had completely missed seeing this option and suggested that we could improve the interface by providing a sort function.

Few of the participants used truncation or made any attempt to take account of differences in spelling (or/our, ise/ize, etc). It would be useful then, if the system itself could take account of these, in particular plurals and spelling variations.

## **Future studies**

A user study done in 2001 (Roca & Nord), found that only 50 per cent of the users successfully navigated the opening screen due to the fact that they didn't have much experience and didn't understand the concept of library research at all. An important lesson here is that the study we conducted at Monash University Library did not include users who had not previously used the library catalogue or who were not experienced searchers of online systems. Whilst the outcome of our study produced a very clean and more appealing search interface to the catalogue, it still means that further work will be needed. New users must be tested to confirm that we have done all we can to ensure true novices easily understand the system without having to spend a long time learning to use it.

The study possibly raised more issues than it resolved, and there is a wealth of data to inform further studies. Asking participants to verbalise their thought processes as they performed the tasks revealed some fascinating, if worrying, information. Conversely, although the reasons for making choices were misguided or showed a lack of understanding of a catalogue, many

participants managed to arrive at the correct result in the end. As librarians, though, we would like our users to feel confident when using the catalogue, and it concerns us to hear comments like 'I feel I have to trick the catalogue to do what I want'. We would like to design studies to understand why users struggle with library catalogues, so we can design strategies to help them make the best use of this resource.

Already mentioned is the need to look in more detail at user approaches to finding electronic documents. We also need to investigate issues left out of this study because of time constraints. These mostly relate to the less traditional uses of a catalogue such as managing loans, using the Voyager interface to search other catalogues and databases, and the use of advanced features like customising preferences, saving records and searches, and SDI services.

The strategies used when too few or too many records are found also deserve further investigation. A huge variety of approaches were used, but more importantly many participants seemed to just poke about trying various things, almost selecting options at random. On the other hand, some participants reported that they normally abandon the catalogue in favour of databases. While using the databases is of itself not a bad thing, we know from other evidence that users struggle even more with database searching. Other responses of concern were the users who said that when they found too few items, they would just assume we had nothing on the topic and would give up. At the other extreme were those who had no confidence in refining a search when they found too many items. They would simply go through the whole lot. One participant reported they had done this with sets of over 1000 records.

The popularity of relevance ranked searches was a surprise. Server log usage ranked it just below author as a proportion of all advanced searches and much higher than any of the browse searches. A significant number of libraries in the competitor analysis provided a relevance ranked option for many of their search types. An interesting sidelight to this issue is a comment reported to us from a library staff member. Her partner is an experienced web user, but a complete library novice. When first shown the results of a catalogue search, he was totally mystified why anyone would want to see the results of a 'topic' search in alphabetical order rather than ranked in some form of importance or relevance to the topic. It would be useful to find out if this is a generally held view amongst the new generation of library users.

The search log analysis done for this study was purely quantitative, focusing on comparing numbers and proportions. The search logs also contain the entire search string with all terms and syntax used; they also record the IP address and are time stamped, so it is theoretically possible to follow a particular user's search strategy. A qualitative analysis of the log files also needs to be done. This would concentrate on such things as the terms used, appropriateness of the search syntax, use of truncation and alternative spellings, reasons for null results, and search modification behaviour.

## **Conclusion**

Overall, we are pleased with the results of this attempt to involve users in the redesign of the catalogue in a more formal way. By applying a rigorous user-testing process, we have taken much of the guesswork out of the choices we make when configuring the catalogue. Certainly, the task-based testing brought out many issues in a structured way that made it very easy to interpret results and make relevant changes to the interface. By testing on users,

we have put those choices back into the hands of the users. Too often in the past, we librarians would argue for hours about what the users might want or need, without having anything, other than anecdotal evidence, to support our views. The logical follow-up, as a result of the changes, will be to survey and test a much larger number of users to ensure that the changes made as a result of feedback from the smaller group, are reflected in the ability of a larger set of users to use and understand the catalogue.

As librarians, we use catalogues and databases daily, and appreciate search interfaces that allow us to perform more and more precise searches. We can forget that, for a casual user of these tools, the sophisticated capabilities provided to perform complex queries, often gets in the way of their being able to perform the most basic queries. We want to provide all the options available, but it is good to be reminded that we need to ensure that the users of our catalogues are novices and require simplicity to be effective users of our catalogues. The simplifying of the main search page with a two-line interface, rather than a single Google like search, will be one worth watching over the next year or so, to see what users prefer.

The new look catalogue was launched on 1 December 2005, and there has been quite a flurry of feedback from the experienced users of the system at Monash. This has included feedback from library staff & academics who want some of the old features back in the catalogue, or who feel they are missing search components that they can't do without. What will be interesting over the next 12-18 months will be seeing what completely new, novice students feel about the catalogue, and what patterns the search logs produce now that the much-simplified search options and terminology are in place.

## Appendix 1: Concerns matrix

Concern	Task or question
<p>2a. What search types do they use? Does this change for different searches?</p> <p>2b. Are multiple rows used on the basic search?</p> <p>3a Which search interfaces do users use/prefer (basic or advanced)?</p> <p>5a Do users select the correct record (in terms of location and availability) record?</p> <p>5b Do users use the various record displays?</p> <p>5c Can users tell which record view they are looking at?</p>	<p><b>Task 1</b> You want to read [book title]*. Is there a copy available for you to borrow? If so, show us which copy you would borrow.</p> <p>[After task, if user selects wrong item] Why did you choose this copy of the book?</p> <p>*[Ask them to find a book where there are multiple copies in multiple locations.]</p>
<p>2a. What search types do they use? Does this change for different searches?</p> <p>2b. Are multiple rows used on the basic search?</p> <p>2c Are subject searches performed differently to known item searches?</p> <p>5a Do users select the correct record (in terms of location and availability) record?</p> <p>5b Do users use the various record displays?</p> <p>5c Can users tell which record view they are looking at?</p>	<p><b>Task 2</b> You've been asked to prepare a paper on [topic]. Find two relevant items that you can borrow now.</p> <p>[At end of task] Why did you choose these two items?</p>
<p>2a. What search types do they use? Does this change for different searches?</p> <p>2b. Are multiple rows used on the basic search?</p> <p>2d How do users search for journal or book articles?</p> <p>5a Do users select the correct record (in terms of location and availability) record?</p> <p>5b Do users use the various record displays?</p> <p>5c Can users tell which record view they are looking at?</p>	<p><b>Task 3</b> You want to read this journal article [give full citation]. Find the article.</p> <p>[In rounds 3 and 4, stop the user when they exit the catalogue and get to the journal.]</p> <p>I'll get you to stop now, but I would like to know what you would do now.</p> <p>*[Make sure the article is only available electronically and the journal is not in the collection.]</p>
<p>7a Do users know how to make loan requests, including Inter-Library Loan?</p> <p>7c Do users know how to check if a loan request has arrived?</p>	<p><b>Task 4</b> [In rounds 1 and 2 show user record screen for this item. In rounds 3 and 4, take user to URL]</p> <p>You've done a search and found that the item you want is only available at the Gippsland campus. How would you arrange to pick up this book from a library on your campus?</p> <p>[At end of task] How would you know when the book you ordered from Gippsland had arrived?</p>
<p>2f How do users deal with searches that produce too few/no results?</p> <p>5b Do users use the various record displays?</p>	<p><b>Task 5</b> [In rounds 1 and 2 show screen with single record (brief view). In rounds 3 and 4 use URL].</p> <p>You searched for the topic [insert topic] and only found this item. Show us how would you go about finding more items on the same topic.</p> <p>[After task completed] What do you normally do if you're doing research on a topic and searching gives you just one result?</p>
<p>2g How do users deal with searches that produce large results?</p> <p>4a Do users use limits? If so what for?</p> <p>5b Do users use the various record displays?</p>	<p><b>Task 6</b> [In rounds 1 and 2 show screen with large number of results. In rounds 3 and 4 use URL].</p> <p>You searched for the topic [insert topic] and found a very large number of results. Show us how you would choose the best 5-10 items.</p> <p>[After task completed] What do you normally do if you're doing research on a topic and searching gives you really large numbers of results?</p>
<p>7a Do users know how to make loan requests, including Inter-Library Loan?</p>	<p><b>Task 7</b> [This task is only for staff and postgraduate students only]</p> <p>In the past, when students or staff wanted a book from a non-Monash library, they would have to complete an online form on the</p>

	<p>library's website. Now, you can use the library catalogue to do this.</p> <p>This book [book title] is not available at a Monash library. See if you can get the library to borrow the book for you from another source.</p>
General user questions or comments	<p><b>Question 1</b> Do you have any questions or comments?</p>
3a Which search interfaces do users use/prefer?	<p><b>Question 2 (search interface)</b> [Show user three types of search UI: basic (one row), basic (two rows), advanced]</p> <p>These are three possible options for how we might design search. Which of these would you prefer to use? Why do you prefer this one?</p>
5d Does the brief (ie default) display contain sufficient information?	<p><b>Question 3a, 3b (record views)</b> [Show user a brief record screen for a book] This is the default (brief) view of a record for a book. Does this contain enough information?</p> <p>[Show user a list of additional fields and sample data that would appear in each field] Would you like the brief record to contain any of these?</p> <p>[Show user a brief record screen for an electronic resource] This is the default (brief) view of a record for an electronic resource. Does this contain enough information?</p> <p>[Show user a list of additional fields and sample data that would appear in each field] Would you like the brief record to contain any of these?</p>
1a. Do users understand the terminology used on various screens?	<p><b>Question 4a, 4b (terminology)</b></p> <p>[Show user a list of screens, one screen at a time, that contain terminology of concern.]</p> <p>Do you know what this means? Should we change this label to make it clearer or easier to understand? What label should we use?</p> <p>[Terms:</p> <ul style="list-style-type: none"> <li>○ login</li> <li>○ start over vs log off vs new search</li> <li>○ search other sites</li> <li>○ show titles</li> <li>○ holds</li> <li>○ document delivery</li> <li>○ request cataloguing</li> <li>○ Non-Monash library loan</li> <li>○ Non-Monash photocopy</li> <li>○ Monash photocopy]</li> </ul> <p>Were there any other words or labels that you noticed that we could improve on?</p>
3b Should we offer more search types?	<p><b>Questions 5a, 5b, 5c</b> [Show the user screenshots of the search types from both basic and advanced search interfaces]</p> <p>Is the meaning of any of these unclear?</p> <p>Which of these do you use when using the library catalogue?</p> <p>Are there any other ways of searching not on this list that you would like to suggest?</p>
4a Do users use limits? If so what for? 4b Should we offer more or less search limits?	<p><b>Questions 6a, 6b, 6c, 6d</b> [Show choose limits and quick limits screens]</p> <p>Have you ever used any of these options?</p> <p>Have you ever used the Electronic Resources option? If yes, in what circumstances?</p> <p>Is it important for you to be able to restrict searches to electronic resources only?</p> <p>Are there search limits that are not on these lists that you would like to be able to use?</p>



<p>Added to test the removal of the 'renew loans' button</p>	<p><b>Question 7</b> [Show user catalogue home page]</p> <p>Imagine you have a book on loan that is due back soon. How would you go about renewing your loan?</p>
<p>8a Do users understand blocked status and what to do about it? 8b Do users understand library fine status and payment?</p>	<p><b>Questions 8a, 8b</b> [Show user a "My loans" screen with blocked status and library fines]</p> <p>Talk me through each of the items on this screen</p>
<p>6a Do users ever save, print or print their searches? 6b Do users understand how use the save, email, print options?</p>	<p><b>Question 9</b> [Show user relevant screen]</p> <p>Do you ever save, print or email your searches?</p> <p>Do you ever use favourites or saved searches and preferences?</p>

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