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<http://www.alia.org.au/publishing/aarl/>

Please cite this as: Jarrett, K., 2012. FindIt@Flinders: user experiences of the Primo discovery search solution, *Australian Academic & Research Libraries*, 43(4).

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FindIt@Flinders: user experiences of the Primo discovery search solution

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In September 2011, Flinders University Library launched FindIt@Flinders, the Primo discovery layer search to provide simultaneous results from the Library's collections and subscription databases. This research project was an exploratory case study, which aimed to show whether students are finding relevant information for their course learning and research. The Library staff ran student usability sessions and an online survey for this search interface. These two methods uncovered data on what elements participants are finding useful or not useful, and what problems they are encountering. The results of this study showed a variety of feedback, which was mainly positive. This feedback has informed how the Library can modify Primo for a better user experience and incorporate beneficial approaches to FindIt@Flinders into its student training plan.

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The author acknowledges the journal, Australian Academic & Research Libraries (AARL) and its publisher The Australian Library and Information Association (ALIA) for giving permission for this manuscript to appear in the Flinders Academic Commons.

Jarrett, K 2012, 'FindIt@Flinders: user experiences of the Primo discovery search solution', *Australian Academic & Research Libraries*, vol. 43 no. 4

INTRODUCTION

In 2011 Flinders University Library implemented the Primo discovery layer search in Beta version. This timely implementation addressed the need for a next generation search interface that is fast and easy to use. With the understanding that library users are familiar with the convenience of Google and Google Scholar, Primo by Ex Libris offers a fast, Google-style single search box. It includes both items within the Library's collections and the majority of scholarly content available through the Library's online databases, which are indexed to article level by Primo Central. This paper reports on the research project that went ahead during the beta phase - the FindIt@Flinders discovery layer online survey and usability study.

When the Library's Discovery Layer (DL) Project Team recommended the implementation of a discovery layer to the University, they explained that the existing Voyager ILMs (integrated library management system) was approaching product end of life, and there was a need to replace the discovery functionality in the lead up to Ex Libris' gradual replacement of their backend functionality; the next generation Alma system. The Project Team also recommended that a discovery layer 'will enhance the accessibility of a broad range of Library information resources to support the teaching, learning and research activities of the University' (Flinders University Library 2010). Primo was the recommended discovery layer product, due to its interoperability with Ex Libris services already in place: Voyager; the federated search tool Metalib; and SFX, the Library's OpenURL link resolver tool. It will eventually replace the Voyager OPAC and integrate with the operation of Alma. Primo is the next generation catalogue interface, and it includes the Primo Central index which aggregates most of the Library's online database resources, indexed to article level.

This exploratory case study was undertaken to gather data from University staff and students about what they would like to see and use in next generation search interfaces. Providing a search service, in consultation with users, may give students what they need to achieve at a high level in their academic work, plus giving researchers the tools which may enhance the quality and impact of their research. These

potential benefits align with the University's key strategies, 'Enhancing educational opportunities' and 'Focusing research' (Flinders University 2009: 2). In addition, the author considered it important to seek the feedback of the Flinders University community on such a new aspect of the Library's services, which could make an impact on their library activities.

AIMS OF THE RESEARCH

The purpose of this research project was to gain feedback from University students about the usefulness of Primo, during the beta phase that followed the soft launch of the interface in September 2011. Branded as FindIt@Flinders, the beta phase ran until its full launch at the commencement of Semester 1, 2012.

This interface is designed to make searching faster and easier, and some settings can be modified in-house to best suit the needs of the local University community. This project measured student feedback to inform decisions on improving FindIt@Flinders where needed, in time for the full launch.

The aims were to:

- Determine user perceptions regarding the usability of the FindIt@Flinders, including any problems being encountered.
- Determine user perceptions regarding the relevance of the information retrieved.
- Determine user experiences of this search interface in comparison to the existing Library catalogue and other web search interfaces they are familiar with.

LITERATURE REVIEW

A review of the literature showed a variety of existing research on usability studies of searches in an academic library setting, including some using Primo. Among these papers were instances of libraries complementing the usability study with other methods, such as online surveys and eye-tracking. To round out the literature review in preparation for this project, previous evaluations of Primo, Primo Central and other Web scale discovery interfaces were also consulted, as were works relating to the 'toolkit' of running usability studies. The latter will be discussed in the methods section.

Primo

The staff of the University of New South Wales (UNSW) Library conducted usability testing of Primo with a small group of undergraduate students, as a part of their initial implementation of the interface in 2009. Students carried out a series of activities on the interface, branded as SearchFirst, whilst being encouraged to talk aloud as they went. UNSW's results found that students often could not find key features on the screen (Fletcher 2011: 5). In the same year staff carried out an eye-tracking study of activities on SearchFirst, followed by the participants giving comments about the interface at the end of each session. The heat maps from this eye-tracking study showed a number of patterns, including that students tend to focus on results at the top of the screen and expect navigation to also be at the top, and that they seemed not to notice 'refine my results' (Fletcher 2011: 13). UNSW Library then decided to decrease the amount of refinement categories and reduce their font size, so as to differentiate from the results display. They emphasised the importance of continuing usability studies in order to improve the design of their interface (Fletcher 2011: 14).

Two usability studies of Primo took place in 2006 and 2007 at the University of Minnesota, a Primo development partner, prior to the release of the product (Sadeh 2008: 20). In the second study, eye-tracking equipment was combined with the usability sessions. Their results included mostly positive comments from the participants, reporting that the interface was friendly and easy to learn and use, and that all of them regarded the faceted browsing as useful for narrowing results sets (Sadeh 2008: 22). The observations noted issues to do with terminology, icon design and places where additional links were needed, which were able to be resolved during this development stage of Primo (Sadeh 2008: 23).

The librarian staff of Zayed University, United Arab Emirates embarked on a comprehensive usability study of four discovery platforms, including Primo, in 2009 and 2010. All participants believed that compared with the current OPAC, each platform they used gave them an enhanced searching experience, liking such features as the resource type icons, facets and tagging (Joc & Chang 2010: 9). The researchers stated that Primo was one of the platforms which met with favourable search results (Joc & Chang 2010: 14).

Coventry University also reported on their usability testing of Primo, through their implementation blog, which took place before its launch. Their usability tasks included journal article-level searches, testing the participants to find the QuickSets (grouped resource categories) in Metalib from the Primo interface. The staff concluded that the usability tests were extremely helpful in identifying certain problems with Primo out-of-the-box (Fisher 2010). They fed back their results to Ex Libris and of those which could not be changed, Ex Libris would consider introducing as future updates. They added in their report that they hope to do further rounds of testing once Primo Central was in place (Fisher 2010).

An understanding of these earlier studies was of great value to the development of the FindIt@Flinders research project. This paper will uniquely contribute to the knowledge in this area, because the usability testing at Flinders included article search tasks with the Library's online collections using Primo Central, as well as searches of the catalogue holdings.

Web scale discovery

Web scale discovery brings about an exciting new phase of library search, overcoming the problem of the slowness of federated searching. In his evaluation of Web scale discovery, Vaughan (2011a: 6) aptly states "by preharvesting and centrally indexing content sourced across multiple silos, Web scale discovery services hold the promise to fundamentally improve and streamline end user discovery and delivery of content". It can be regarded as Google for the library's scholarly content, a pre-aggregated index that normalises each item equally, so that it is easily discoverable, yet must be constantly updated as the data changes (Burke 2010: 8). An important concept of Web scale discovery is that it exposes licensed content within its index, and a visual cue in the results will indicate if access to the full text is available to the user (Vaughan 2011a: 9). This should increase the use of licensed content and a university community can benefit more fully from the vast resources of a library's collections. Ex Libris' answer to Web scale discovery, Primo Central, was launched in mid-2010 (Vaughan 2011b: 39). Primo harvests local collections as well as the Primo Central index, combining the results for the user. Primo's relevancy ranking algorithm takes in elements such as term frequency, currency, and rate of an item being accessed; plus peer-review status when the 'show-only' facet is selected (Vaughan 2011b: 40).

Discovery layers other than Primo

Some interesting user studies have taken place with other discovery layers, VuFind and Summon. York University Libraries in Toronto launched the open access discovery layer VuFind in January 2010, and then performed usability testing with students plus an online survey of their user community. Studying the

usability of VuFind by combining these two methods resulted in extensive findings. These indicated that VuFind offered many improvements compared with the old catalogue (Denton & Coysh 2011: 317). For example, feedback showed that the interface was intuitive and user-friendly, including the ease of 'add to favourites' bookmarking, and bringing together available physical and electronic holdings that are easily visible to users (Denton & Coysh 2011: 317). However, the authors also noted that journal articles from a citation were challenging to find. The staff knew this has been problematic from previous user testing and they acknowledge it would not be resolved until article-level metadata was loaded into VuFind (Denton & Coysh 2011: 316).

Queensland University of Technology (QUT) Library launched the Summon web scale discovery search as 'Quick Find' in February 2010. They worked with feedback from their 'Tell us what you think' page, a 'heat map' measuring clicking activity on the Library's homepage to Quick Find and other services, and usability testing with mainly undergraduate students. These methods uncovered rich data, such as success in finding known items mainly due to participants limiting to a specific material type in the pre-search and there was a tendency to view a set of results then change search terms instead of using the refinement facets (Slaven, Ewers & Vollmerhouse 2011: 13). Their iterative feedback process was beneficial to the service. Staff refined the library home page as a result of consulting students and, after improving Quick Find, followed up with those who initially gave written feedback at the early stage of the launch (Slaven, Ewers & Vollmerhouse 2011). Also at the beginning of 2010, Edith Cowan University Library launched Summon and ran usability tests of their 'Library One Search' with student participants. Their results raised some good questions about what should be covered in library student training sessions and the ability of students to evaluate the varying sources of materials in a unified results list (Gross & Sheridan 2011: 244).

The studies which took place at York Universities and QUT Library demonstrate the value of using multiple methods to gather data on the usage of their discovery layers. At Flinders University Library we were fortunate to have the resources to conduct both usability sessions with student participants in three rounds, and an online survey.

METHODS

The FindIt@Flinders discovery layer study took place two months after the beta launch of Primo. The study combined a brief online survey with a series of face-to-face usability sessions during which participants performed tasks with the search interface. By gathering data with two distinct methods, it was possible to gain comprehensive feedback from participants.

The author's participation in the DL Project Team was an important part of the process, as it enabled involvement in the overall implementation of Primo. This Project Team consisted of members with a range of expertise from across the Library's departments, including information technology, information infrastructure and resources, digital resources, and learning and research services. The University's Social and Behavioural Research Ethics Committee granted approval (project no. 5352) for the online survey and usability study, so that results could be shared outside the institution.

The usability study was structured in three rounds throughout October and November 2011, each spaced by approximately two weeks to allow for debriefing, reporting back in writing to the DL Project Team, and if possible, tweaking the interface. The first of the three rounds tested with Voyager and Metalib instead, in order to compare with Primo, therefore enhancing the overall process.

Upon consulting with members of the DL Project Team, it was decided that undergraduate students were the principal target audience for FindIt@Flinders. The Project Team perceived postgraduate students and

academic staff as less of a target audience because they would generally use search platforms for content that is specific to their discipline. Therefore the emailed call for participants went out to undergraduates from three cohorts: the School of Nursing and Midwifery, the School of the Environment and the Department of English and Creative Writing. These diverse cohorts were chosen because the students might be expected to present a variety of search styles, thus uncovering more user data. A convenience sample was drawn from students who self-selected to participate in the study, resulting in an uneven representation from the three cohorts. Six students per round were recruited, with two-thirds of the sample from the School of Nursing and Midwifery. Despite this imbalance, the video and note recordings of participants showed a variety of search behaviours.

Methodologies for usability testing and online questionnaire design were investigated in conjunction with the literature review of other university library studies. Krug (2006: 135) emphasises that the usability process is iterative and therefore about testing, fixing the web pages, and testing again. He explains that users will not find as many problems with an interface in just one round of testing, and with problems potentially fixed between the first and second rounds, other problems may become visible that were not obvious the first time (Krug 2006: 139). Iterative design is also strongly recommended by Nielsen (2000), as is the suitability of testing with five users as part of a run of small tests. He notes that although people are different, which means researchers will discover the second and third participant doing something new compared with the first, once you get to five participants and beyond, the differences become smaller (Nielsen 2000).

The author was keen for data to be collected from two sources, as this triangulation enables the generation of knowledge from different levels and contributes to research quality (Flick 2007). The survey was open for 26 days in late October and November, which occurred at the same time as the usability sessions, before the long summer break. University staff and students were invited to complete the survey via the Library home page news feed, the FindIt@Flinders 'Let us know what you think' link on the home page, and the 'Feedback' link on the main search page. There were also flyers on the information desks and a plasma screen advert across the library branches. Survey participants went in the draw to win one of ten \$25 book shop vouchers.

Usability sessions

The usability testing software was Silverback 2.0, which runs on Mac OS X. It records the screen movements of a session, plus audio and video capture at the screen. Sixteen usability tasks were created, which varied slightly to allow for the different environment in the initial Voyager OPAC round. Some tasks were adapted from the undergraduate literacy tool, 'Library Assignment', and as a session progressed the tasks would generally become more complex. A series of questions relating to the research aims were developed by the author and used for discussion after participants finished the tasks.

Participants each received introduction/information sheets and consent forms, plus a \$30 shopping voucher for their time. They were advised the session would last approximately one hour, although the majority of participants completed it in less time. Before starting the recording, the facilitator gave a briefing based on Krug's guide (2006: 146), emphasising to the students that the study was testing the web interface, not their searching skills. They were also advised that they would be prompted to think out loud to help determine the usability of the search tool. The facilitator was accompanied by a note-taker, and a liaison librarian or senior staff member observed the sessions. When a session was completed and the participant had left the room, the staff had a debriefing session to discuss highlights observed.

As each session took place, the facilitator prompted the participant to think aloud and replied neutrally to a student's question about the interface, using responses such as 'What do you think?' or, 'I can answer that

for you at the end of the session'. The facilitator also cleared the form data by closing and reopening the browser between each session to prevent text suggestions from the previous session appearing at the search box. Unfortunately, this was overlooked for one session during the second round and resulted in influencing the search behaviour of the participant.

The data analysis of the usability sessions involved watching the video and adding to the notes produced by the note takers. Analysis consisted of measuring participants' performance against an ease-of-use measurement, comments in the discussion section, time taken on tasks, and proportion of tasks successfully completed. The ease-of-use measurement was a tool for codifying all the notes and can be seen in the tables below.

Online survey

The online survey was designed to be brief, only taking about five minutes to complete. The questions were developed to gain a picture of how FindIt@Flinders had been received, in terms of usefulness and user satisfaction. It also addressed the aims of research and therefore asked questions on ease of use, finding relevant information, and comparison with the regular Library catalogue and other interfaces. Respondents were asked about usage of the 'Show only' and 'Refine my results' options, plus the choice to 'Tell us more...' as a free-text question.

SurveyMonkey was used to run the survey. As it was a busy time of semester for assignments and upcoming exams, the response rate was modest, so the survey was extended from 19 to 26 days to gain more feedback data. 85 responses were received, and SurveyMonkey provided clear, accessible tabular and chart representations of the data.

FINDINGS AND DISCUSSION

Usability sessions

Across all the sessions, a total of 14 hours and 4 minutes recording time took place, averaging 47 minutes per participant. The tables on the following pages indicate the outcomes from the three rounds comprising of six participants per round. In order to determine the usability of tasks, average time taken, successful completion rate and an 'Ease of use' measurement were tabulated.

An interesting result can be seen in the summary of total Voyager OPAC sessions in which a rate of 83% successful task completion was recorded, compared with the FindIt@Flinders sessions showing a successful task completion rate of 86% for Round 1 and 84% for Round 2. This suggests that students are reasonably skilful in being able to complete the majority of tasks in general. One participant commented that she was familiar with the old catalogue, having used it for three years. The familiarity with the old OPAC and the newness of FindIt@Flinders could explain the similarity in the successful task completion rates. In relation to participants' ability to complete the majority of tasks, it was noted that occasionally participants misinterpreted a question, or commented that they came across the correct result by surprise, and some of the more complex tasks took varying amounts of time.

As set out in the tables, The Voyager OPAC sessions show a higher proportion of tasks classified in the 'Difficult and/or unsuccessful' category (23%) compared with the FindIt@Flinders rounds (12.5% for Round 1 and 19% for Round 2). Observing these participants perform article searches via the OPAC without any prompting revealed which avenues they tended to choose. Five of the six participants used functions in Metalib, such as the 'QuickSearch' or 'Find eJournal' screens. The sixth participant used Google Scholar, and from those results she clicked through the available SFX/LinkIt@Flinders to access the article. Due to the

absence of a peer review limiter or facet in Voyager, this task was modified in the OPAC sessions to a question instead, regarding how the participant usually determines if articles are from peer-reviewed journals.

Compared with the OPAC sessions, Round 1 of using FindIt@Flinders uncovered the slightly higher successful task completion rate as mentioned above. Interestingly, a greater proportion of tasks were completed in the 'Neutral (neither straightforward nor difficult)' and 'Straightforward and easy' categories, being 65.5% compared with the OPAC equivalent of 55%.

Upon completion of Round 1 the author reported the identified usability problems to the DL Project Team and when possible, the interface was adjusted. For example, on a few occasions students hesitated or commented that it was not clear where to sign in to add a tag. They would look for a hyperlink at the 'Sign in to add new tags' message on the Reviews & Tags tab to discover that 'Sign in' is on the far top-right corner of the screen. On one occasion a student could not add a tag and was therefore unable to complete that task. Fortunately the wording could be modified to display 'Sign in *above* to add new tags.' This appeared to improve participants' tagging behaviour in Round 2. In addition, two participants suggested that two search boxes were not enough in the advanced search screen, and as a result a third search box was inserted.

Round 2 saw a slightly higher proportion of tasks completed in the 'Neutral (neither straightforward nor difficult)' and 'Straightforward and easy' categories, being 72% compared with the Round 1 equivalent of 65.5%. Article searches were generally taking less time using FindIt@Flinders compared with the OPAC. The task to find five full text, peer-reviewed articles about aquatic invertebrates averaged 9 minutes for the OPAC participants, but only 5 minutes in Round 1 and 3.5 minutes for the Round 2 FindIt participants. Usability problems uncovered in Round 2 were also reported to the DL project team. Some elements could not be modified in Primo, so instead these problems were highlighted to the Liaison Librarians for the purpose of student training sessions. A report was distributed to the Librarians in February, the lead-up to start of semester. Below are some findings included in this report:

- Half of the sample were unable to identify different editions of a text due to the placement of the 'view versions' tab, being off to the right in the results display (see task 2b in Tables 2 and 3). Some felt they had found the edition information they needed, even though they actually had not found the right information.
- A few students stumbled in journal article tasks, as they set the 'Journals' material type parameter in the Advanced Search and it was returning materials at journal title level. Two of these students then had 'a-ha' moments, switched to the Articles parameter and found what they were looking for.

Table 1. Tasks for Voyager OPAC

Tasks for Voyager OPAC: Six participants <i>n</i> =6		Average time taken (minutes)	Successful completion (no. of participants)	Ease of use measurement			
				Difficult and/or unsuccessful	Confusing but got there	Neutral (neither straightforward nor difficult)	Straightforward and easy
1	Find the book Psychology for health professionals / [edited by] Patricia Barkway.	1	100% (6)			2	4
1a	See if there is a copy of this book available in the Medical Library.	0.5	83% (5)	1			5
2	Search for the book Biology by Neil Campbell (2009)	1.5	100% (6)		1	1	4
2a	How many copies of this book are available?	1	100% (6)			1	5
2b	How many editions of this book does the library hold?	2	67% (4)	2	2	1	1
3	Search for jigsaws in the Teaching Resource Collection (also known as TRC)	3	100% (6)	1	3	1	1
4	How many books by Ian McEwan are available in the library?	1.5	50% (3)	3		3	
5	Find a video about multicultural education	2	100% (6)	1		2	3
6	Find an eBook about archaeology	2.5	83% (5)	1	2		3
7	Find 5 fulltext journal articles about aquatic invertebrates	9	83% (5)	2	4		
7a	How do you usually determine if they are from peer-reviewed journals?	n/a	n/a	n/a	n/a	n/a	n/a
8	Find the article "The March of the Robot Dogs" by Robert Sparrow in the journal Ethics and Information Technology.	4.5	83% (5)	2	4		
9	Find a journal article about global warming published in the last 5 years	5	100% (6)	2	1	2	1
10	Find a Flinders thesis on clinical nursing practice	3.5	83% (5)	1	1	1	3
11	Search for a topic of interest, then save the search query useful to you in the future	2.5	83% (5)	1	2	3	
11a	Also, place a hold on an item of interest from this search	2.5	33% (2)	4			2
Totals:		42	83% (75)	23% (21)	22% (20)	19% (17)	36% (32)

Table 2. Tasks for FindIt@Flinders Round 1

Tasks for FindIt@Flinders Round 1: Six participants n=6			Ease of use measurement				
			Average time taken (minutes)	Successful completion (no. of participants)	Difficult and/or unsuccessful	Confusing but got there	Neutral (neither straightforward nor difficult)
1	Find the book Psychology for health professionals / [edited by] Patricia Barkway.	2.5	100% (6)		1	1	4
1a	See if there is a copy of this book available in the Medical Library.	1	100% (6)				6
2	Search for the book Biology by Neil Campbell (2009)	1	100% (6)			2	4
2a	How many copies of this book are available?	1	67% (4)	2	1	1	2
2b	How many editions of this book does the library hold?	3	50% (3)	3	1	1	1
3	Search for jigsaws in the Teaching Resource Collection (also known as TRC)	3.5	100% (6)	1	2	1	2
4	How many books by Ian McEwan are available in the library?	3.5	67% (4)	2	1	3	
5	Find a video about multicultural education	2	100% (6)		1	3	2
5a	Add the video to your e-Shelf	2	100% (6)		1	3	2
6	Find an eBook about archaeology	4	100% (6)		2	1	3
7	Find 5 fulltext, peer-reviewed journal articles about aquatic invertebrates	5	100% (6)		1	3	2
8	Find the article "The March of the Robot Dogs" by Robert Sparrow in the journal Ethics and Information Technology.	3	100% (6)		2	1	3
9	Find a journal article about global warming published in the last 5 years	3.5	100% (6)		2	2	2
10	Find a Flinders thesis on clinical nursing practice	5	67% (4)	2	2	2	
11	Search for a topic of interest, then add a tag to a result item that's useful to you	4.5	83% (5)	1	2	3	
11a	Also, place a hold on an item of interest from this search	4	83% (5)	1	2		3
Totals:		48.5	86% (85)	12.5% (12)	22% (21)	28% (27)	37.5% (36)

Table 3. Tasks for FindIt@Flinders Round 2

Tasks for FindIt@Flinders Round 2: Six participants* n=6		Average time taken (minutes)	Successful completion (no. of participants)	Ease of use measurement			
				Difficult and/or unsuccessful	Confusing but got there	Neutral (neither straightforward nor difficult)	Straightforward and easy
1	Find the book Psychology for health professionals / [edited by] Patricia Barkway.	1	100% (6)				6
1a	See if there is a copy of this book available in the Medical Library.	0.5	100% (6)				6
2	Search for the book Biology by Neil Campbell (2009)	1.5	100% (6)			2	4
2a	How many copies of this book are available?	1.5	50% (3)	3			3
2b	How many editions of this book does the library hold?	1	50% (3)	3			3
3	Search for jigsaws in the Teaching Resource Collection (also known as TRC)	3	83% (5)	2	1	2	1
4	How many books by Ian McEwan are available in the library?	2	100% (6)			4	2
5	Find a video about multicultural education	2	100% (6)			2	4
5a	Add the video to your e-Shelf	1.5	83% (5)	1	1	1	3
6	Find an eBook about archaeology	2.5	100% (6)		1	1	4
7	Find 5 fulltext, peer-reviewed journal articles about aquatic invertebrates	3.5	67% (4)	2		3	1
8	Find the article "The March of the Robot Dogs" by Robert Sparrow in the journal Ethics and Information Technology.	3	83% (5)	1	1	1	3
9	Find a journal article about global warming published in the last 5 years	3	83% (5)	2	1	2	1
10	Find a Flinders thesis on clinical nursing practice	2	100% (6)		2	1	3
11	Search for a topic of interest, then add a tag to a result item that's useful to you	3.5	100% (6)	1	1	2	2
11a	Also, place a hold on an item of interest from this search	3.5	50% (3)	3	1	1	1
Totals:		35	84% (81)	19% (18)	9% (9)	23% (22)	49% (47)

*Includes participant from Round 2 session 3 who was influenced by suggestion terms, due to previous form data not cleared in the browser.

- Facets were heavily used by a number of students, with use increasing as a session progressed. This worked in their favour, as some of the tasks further along were more complex.
- Other highlights included comments on wanting more flexibility with date facets, plus the suggestion to search within a search results set. For the latter, one can add more terms and click search again for a narrower set of results.

Across the twelve FindIt@Flinders sessions, the 'Questions for discussion' time was used to ask participants what they liked, disliked or found difficult with the interface, plus how it compared with the regular catalogue and other search engines they were familiar with. It was noted that eight (or two-thirds) of the participants said they either liked or found easy the ability to narrow the search results with the refine/show only facets. They gave some interesting comments, such as:

"The visuals of it are a lot better, and easier to read, and set out really really well." [In comparison with Google Scholar]

"What I also liked about this platform is that I can look for journals or I can look for articles, so this differentiation". This participant also commented, *"To find how to access the ejournals. I think that could be a little bit more obvious maybe."*

"I think on the last assignment it saved me probably about 2, 3 hours, so it was a huge difference on researching articles... It's great that you've got virtually an all-at-one shop... you're not having to go search every individual database to find what you want, so I'm really impressed with the system."

"No one likes change..."

"Wouldn't say it's any better or worse; be happy to use this, but happy to use the others as well"

"Google's always been my favourite, so that's the thing..."

"However as a new product we have to take time to get used to it, in terms of its collections... but it takes time for people to accept it"

The comments were then categorised, resulting in 50% positive, 27.5% negative and 22.5% neutral comments. Coincidentally, the proportion of comments in these categories was the same in both Round 1 and Round 2.

There were limitations to the usability study and resulting data. As mentioned above, the failure to clear previous form data in the browser in Round 2 session 3 appeared to influence the participant by suggesting terms. The decision of the author to classify events from the video recordings and notes (ease of use, positive, negative and neutral) was subject to her interpretation of them. Eighteen participants is a very small sample of the student population, so it is clearly not representative of the whole population. Also due to the small sample, it is not feasible to undertake more detailed statistical analysis of the data.

The usability study showed some evidence to support the goal that FindIt@Flinders is easy to use and effective for student searching. The task to search for a topic of interest gave participants an opportunity to search more naturally for material relevant to them, and use the interface in a way that directly relates to their studies. The variety of workable search approaches by participants demonstrated the versatility of Primo, reinforcing its usefulness. The results overall appear to show a mainly positive reception of FindIt@Flinders, although usability problems were revealed.

Online survey

The 85 responses to the online survey provided data showing favourable results against the criteria of the research project's aims, in relation to users' experiences. Referring to the table below and taking an average across the four questions, 78% responded to these in either the 'good' or 'excellent' categories.

Table 4. Online survey responses to question 1

Please indicate your experience of FindIt@Flinders so far, in terms of:	Very poor	Poor	Average	Good	Excellent	Response Count
Ease of use	0	1.2% (1)	12.9% (11)	62.4% (53)	23.5% (20)	85
Finding the relevant information required	0	3.5% (3)	17.6% (15)	56.5% (48)	22.4% (19)	85
Comparison with other web search interfaces	0	3.5% (3)	28.2% (24)	47.1% (40)	21.2% (18)	85
Comparison with the regular Library catalogue	0	2.4% (2)	17.6% (15)	50.6% (43)	29.4% (25)	85

n = 85

Of the 85 respondents, 72 indicated they had used the 'Show only' or 'Refine my results' facets, with 'Full text online' and 'Subject' being the most useful respectively. The free-text question, 'Please tell us more on what you think of FindIt@Flinders' was answered by 48 respondents. The comments were then categorised, resulting in 48% positive, 48% negative and 4% neutral comments, including 6 respondents who gave both positive and negative comments in their feedback. Again the decision of the author to classify these comments was subject to her interpretation of them. Some brief examples of respondents' comments are:

"Honestly, any improvement to the system is welcome."

"The sheer number of different resources that it shows to be available to us is amazing, and having it all together both catalogue and outside database, is amazingly helpful. The ability to access so many resources all at once is brilliant."

"The user interface is a little complex."

"Perhaps an exact phrase option on the side bar would be good as well to minimise extraneous results."

As noted, 85 respondents are a very small slice of the student population, and this limits the generalizability of the online survey results. Nevertheless, the data from the survey appear to indicate an overall positive reception of FindIt@Flinders (see Appendix 1 for further survey results).

CONCLUSION

The purpose of this study was to uncover what University staff and students would like to see and use in a next-generation search interface to best support their teaching, learning and research activities. By running the usability study and online survey during the beta phase of FindIt@Flinders, participants demonstrated a mostly positive experience in terms of ease of use, effectiveness and the ability to find relevant results. The study succeeded in identifying some problems with the interface and, where possible, these were modified in Primo or highlighted for Library staff to incorporate into the student training plan for 2012.

As an exploratory case study, both methods of data collection drew on very small sample sizes. While these limitations are noted, the study design and general findings will contribute to the LIS body of knowledge on usability and user satisfaction with discovery layers. They also indicate that Web scale discovery has made article-level searching more accessible for people. As a new search tool, more research is needed to explore different aspects of Web scale discovery. In particular, further research into Web scale discovery in relation to mobile devices would be beneficial, as well as research that compares user feedback with search interface usage reports and statistics. Librarians can and should apply the continuous improvement ethos, to further

the discoverability of resources and therefore enrich people's learning and research, and this exploratory study has made small steps towards a better understanding of how academic library users access quality scholarly information.

Acknowledgements

The author would like to acknowledge the assistance of her colleagues with running the usability sessions, typing notes, and analysing the videos and data: Paul Alderson, Aliese Millington, Nikki May, Chris O'Malley, Sue Hollingsworth and Peter Newman. Without their support and time this project would not have been possible. She would also like to thank John Banbury, Kate Sinclair and Liz Walkley-Hall for their advice and mentorship during this project.

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Appendix 1: Further online survey results

Question 2.

How often are you using the 'show only' and 'refine my results' options on the left-hand side of the screen? Please specify:	Response Per cent	Response Count
Every time	7.2%	6
Frequently	22.9%	19
Sometimes	42.2%	35
Occasionally	16.9%	14
Never	10.8%	9
<i>answered question</i>		83
<i>skipped question</i>		2

Questions 3 and 4. Respondents who answered 'Never' to Question 2 could skip these questions, plus four others chose to skip it.

Which 'show only' options did you find to be useful? (Select one or more answers)	Response Per cent	Response Count
Peer-reviewed Journals	50.0%	36
Full Text online	76.4%	55
Available in the Library	43.1%	31
eBooks	29.2%	21
Cited Articles	25.0%	18
<i>answered question</i>		72
<i>skipped question</i>		13

Which 'refine my results' options did you find to be useful? (Select one or more answers)	Response Per cent	Response Count
Library	41.7%	30
Collection	9.7%	7
Resource type	19.4%	14
Date	44.4%	32
Subject	56.9%	41
Author	44.4%	32
Language	13.9%	10
Course	18.1%	13
Lecturer	6.9%	5
<i>answered question</i>		72
<i>skipped question</i>		13