Library Curriculum Pilot Project Report
Building Blocks: Embedding inquiry/research (information literacy) graduate capabilities into the curriculum

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Project purpose and overview

The University's *Design for Learning*\(^1\) recommendations make clear that a systemic, coherent and sustainable University–wide approach to the design of undergraduate programs is needed to ensure all students are given opportunities to develop knowledge and skills in the six broad graduate capabilities (Writing, Speaking, Inquiry/Research, Critical Thinking, Creative Problem Solving, Team Work).

Information literacy is a key element of the inquiry/research graduate capability. While La Trobe University librarians have long collaborated with academic staff to provide student information literacy programs, many students miss out on developing these skills sufficiently. All students need the best possible chance to develop foundation information literacy skills for effective research in first year and throughout their undergraduate degree.

The ‘Building Blocks: Embedding Inquiry/Research (information literacy) Graduate Capabilities into the Curriculum’ project investigated these issues by testing and refining current Library processes and practices, and exploring potential new information literacy program design and resources. Experience from this project will inform the future direction of information literacy programs across the University. Lessons learnt from the project provide a strong imperative and rationale for implementing a model of research skills education that gives all La Trobe students the opportunity to graduate with the necessary information literacy skills for work, life and lifelong learning. The outcomes and recommendations of the project are the first step in a larger vision of all La Trobe students being information literate by the time they graduate.

Information literacy issues

Current information literacy programs at La Trobe University library employ a diverse range of approaches and delivery methods. The most widespread current approach is based on a traditional model which relies on individual academic staff inviting librarians to participate in skill development in specific units. This model involves a reliance on face-to-face delivery of skills sessions by librarians as a key aspect of the programs. Collaboration between librarians and academics using this model has been highly successful as reflected in feedback from academic staff and students, survey results and awards to staff. However the current programs are often not intentionally designed to be embedded as a cohesive part of the curricula structure and do not give all students equal opportunities to develop information literacy skills at the most appropriate points in their undergraduate education.

Considering that over half of La Trobe undergraduates are not exposed to basic library research skills, our approach to information literacy skill development needs to be institutional in scale, systematic and always transparent to students. New approaches are needed if our information literacy programs are to be relevant and sustainable in to the future, The ‘Building Blocks’ project explored the underlying issues that restrict the growth and development of our current programs. For example our current programs are limited because:

- information literacy is perceived as an optional add-on rather than a foundation skill
- some students have to attend more than one similar face-to-face session while other students receive no session
- students become disengaged by repeating similar skills instruction in different units or being asked to tackle advanced skills before foundation skills are mastered.
- ad hoc development occurs rather than coherent development over the course of an undergraduate program
- impact of the Library’s contribution is not regularly measured to inform future program planning and resource allocation
- delivery of the face-to-face sessions is very time intensive and does not reach all students
- appropriate online resources are not available

\(^1\) La Trobe University. *Design for Learning. Curriculum Review and Renewal at La Trobe University*. 2009.
Project parts
In order to achieve its aims and explore these issues the project focussed on four key areas of activity:

1. Development of an Information Literacy Strategy
2. Action research – evaluation of Health Sciences common first year information literacy program
3. Development of reusable learning objects
4. Investigation of possible first year information literacy program models for Science, Technology and Engineering

Each of these four parts of the project was interrelated. Four cross-campus working groups were set up to undertake the investigation in each part of the project. These were:

- Information Literacy Strategy working group
- Action research: Health Sciences evaluation working group
- Reusable learning objects working group
- Science, Technology and Engineering first year information literacy program working group

Investigations carried out in the project parts were a source of cross-fertilisation of ideas and dialogue between staff across the project. The working groups’ deliberations resulted in distinct outcomes and recommendations for each part of the project. Together the outcomes of each part of the project form a holistic solution for delivering effective, systematic and sustainable information literacy programs that are part of the fabric of the curriculum across the University.

Project outcomes
The outcomes of the project include an information literacy strategy, reusable learning objects, research reports and recommendations for future practice and development.

The development of an Information Literacy Strategy was central to the project. The proposed Strategy is intended to be implemented as a whole of University activity, strongly based in discipline specific, embedded academic tasks and supported by comprehensive Library services and resources. Implementation of the strategy model should ensure information literacy programs are part of the curriculum across the University.

Development of the Information Literacy Strategy has involved consultation across the University and the proposed strategy is closely aligned with the key themes and recommendations in Design for Learning.

The Strategy builds upon the existing positive partnerships between academics and library staff, and the services and resources provided by the Library, but does so in a more scalable, sustainable and systematic way.

The Strategy completes the Library Information Literacy Policy and Framework developed in 2008. The Policy explains why information literacy skills are crucial to independent learning and outlines the Library’s objectives and responsibilities in contributing to the development of information literate graduates. The accompanying Framework offers a guide to the sequential development of Information Literacy skills, matching desired attributes with specific competencies across three levels.
The Information Literacy Strategy acknowledges that student development takes place in a whole of University context through activities that are integrated into the curriculum and those that supplement the curriculum. It adds to the existing Policy and Framework by outlining an action plan for using the Information Literacy Framework as the basis for developing inquiry/research capabilities.

For undergraduates the Strategy proposes an innovative and new approach to design of information literacy programs to ensure students reach the proficient level of the Information Literacy Framework by the time they graduate. This means setting students on a learning continuum in first year so that they are able to develop foundation skills early in the course of study and progress to a proficient level of skills by their final year.

**New perspectives**

The challenges and lessons learned were many over the course of the project. The project working groups discovered promising approaches and new models for University-wide information literacy programs and developed the online resources and the scaffolding to support these new approaches. The emphasis on action research in the project resulted in development of useful indicators and measures for usability testing of online resources and diagnosis of student information literacy competency and skill levels. The testing conducted also revealed likely pitfalls in relation to questionnaire design and statistical analysis.

The project was complex and ambitious. In an ideal world it may have been more logical to complete its four interrelated parts in an ordered sequence rather than concurrently, starting with development of the Information Literacy Strategy. However, having worked on the various parts of the project concurrently instead of in stages means we are now well advanced in terms of field-testing new models for entry level undergraduate programs and have made significant progress in the development of online resources to support implementation of the proposed Strategy. The complexity and intensity of the project also served to create a positive momentum and enthusiasm, both in the Library and across the University, for information literacy and the intentional design of embedded information literacy programs. Implementation of the recommendations from the project will result in ongoing high quality, coherent and consistent information literacy education at all levels across the University.
Deliverables

Information Literacy Strategy working group

1. Information Literacy Discussion Paper
2. Revised Information Literacy Policy and Framework
3. Information Literacy Strategy
4. Information literacy Strategy Summary

See Appendices 5-7.

Action research: Health Sciences evaluation working group

1. Pre-experience survey report
2. Pre/post experience survey: final report
3. LMS Quiz results report
4. Health Sciences information literacy modules usability testing report
5. Health Sciences Faculty staff experience of the Library involvement in the Common First Year: Online survey report

See Appendices 8-12.

Reusable learning objects working group

1. Foundation Information Literacy modules
   http://latrobe.libguides.com/so
Science, Technology and Engineering first year information literacy program working group

1. Proposal - Using Wikis to embed Information Literacy in Science, Technology and Engineering Cornerstone Units

See Appendix 15.

Communications and promotion

2. Library Link articles
3. Library News article
5. Project summary flyer
6. Project postcard

See Appendices 16-19.
Key Recommendations
The outcomes from the ‘Building Blocks’ project include recommendations for how the Library can continue to work in partnership with Faculties to enhance student learning and contribute to relevant recommendations of Design for Learning. The new approach proposed by the Information Literacy Strategy provides a mechanism for increasing the scale and ongoing evaluation of information literacy programs. Contributing to improving information literacy teaching practice within flexible learning environments to enhance graduate capabilities is a strategic priority for the Library in 2010.

Information Literacy Strategy
1. The proposed Strategy is enshrined in University policy and its principles adopted by the University.
2. The Strategy is implemented.

For full recommendations see page 13.

Action Research – Health Sciences evaluation
The recommendations from this part of the project focus on further improvements to the information literacy program for future cohorts of the common first year. In short the recommendations that have emerged are mainly related to the following six themes:

1. Reviewing online information literacy modules
2. Marketing online modules and library resources and support
3. Linking evaluation of information literacy programs to evidence about student entry-level information seeking skills and progress in first year
4. Reviewing the online quiz
5. Maintaining and reviewing where appropriate collections strategies for large cohorts in the light of evaluation data
6. Continuing to work with Faculty staff to further refine the embedding of information literacy skills in the common first year

For full recommendations see page 28.

Reusable learning objects
The Reusable Learning Objects part of the project made recommendations based around ten key themes. These themes are:

1. Evaluation and usability testing of generic modules
2. Naming and promotion of generic modules
3. Alignment of reusable object with the Information Literacy Strategy
4. Development of additional modules
5. Replacing Library Skills Online with the generic modules
6. Implementing LibAnswers
7. Additional student support materials
8. Professional development and training
9. Feedback/enhancements and administrative issues
10. Consistency in bibliographic styles for La Trobe University

For full recommendations see page 33.
Science, Technology and Engineering first year information literacy program

1. Continue to collaborate with Faculty staff to implement the Information Literacy Strategy in the Faculty of Science, Technology and Engineering first year curriculum
2. Implement proposal to use wikis to facilitate and enrich information literacy teaching in first year Science cornerstone units.

For full recommendations see page 36.

Concurrent initiatives
In addition to the key recommendations there is scope for investigating a range of concurrent initiatives that would supplement and reinforce the recommendations from the various project parts. Suggestions for concurrent initiatives fall in to the following categories and are based on specific educational design principles.

1. Investigate peer support programs focussed on research skills.
2. Improve Library/LMS involvement.
3. Continue to develop mini help aids.
4. Investigate reusable learning objects network amongst academic libraries
5. Develop video snapshots about the research process using real La Trobe student and academic voices.
6. Mainstream evaluation as part of future information literacy programs.

Suggestions related to these themes provide a starting point for developing additional future initiatives. For full details see Appendix 20.

Resources
Overall the project team included twenty library staff. At least 1609 staff hours were spent on the project. As staff did not record hours worked on the project before July the actual number of hours would be higher than the total indicated below.

<table>
<thead>
<tr>
<th>Project part</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications</td>
<td>83</td>
</tr>
<tr>
<td>IL Strategy</td>
<td>324</td>
</tr>
<tr>
<td>HS Action research</td>
<td>356</td>
</tr>
<tr>
<td>Reusable Learning objects</td>
<td>687</td>
</tr>
<tr>
<td>STE</td>
<td>159</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1609</strong></td>
</tr>
</tbody>
</table>

A total of $21,447 was spent on the project. The major cost was staff backfill, although only a fraction of the hours (10%) spent on the project were able to be backfilled.

<table>
<thead>
<tr>
<th>Expenses</th>
<th>Cost $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff backfill - all campuses</td>
<td>6,262.79</td>
</tr>
<tr>
<td>External consultant - SPSS</td>
<td>5,069.43</td>
</tr>
<tr>
<td>Software</td>
<td>3,164.80</td>
</tr>
<tr>
<td>Workshop expenses</td>
<td>2,884.00</td>
</tr>
<tr>
<td>Communications</td>
<td>4,012.70</td>
</tr>
<tr>
<td>Usability testing</td>
<td>54.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21,447.72</strong></td>
</tr>
</tbody>
</table>
**Project Team members**

Fiona Salisbury (Library Project Leader)

**Information Literacy Strategy**
Linda Sheridan (Coordinator), Claire Brooks, Iris Perkins, Tracy Robertson, Fiona Salisbury, Maureen Speed.

**Action research: Health Sciences evaluation**
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**Science, Technology and Engineering first year information literacy program**
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**Communications (Library)**
Virginia Ruchel (Coordinator).

**Acknowledgements**
The project would not have been possible without the support of the CTLC and the Library. In particular, Jason Brown from the CTLC provided invaluable project management support and guidance.

Fiona Salisbury
Library Project Leader
Learning and Research Services Manager
22 December 2009
Project Part 1: Information Literacy Strategy

Aim and rationale
The aim of this part of the project was to develop a strategy to assist the University in fulfilling its aim to develop graduates with capability in inquiry/research, while outlining the library’s role in that development.

The strength of the Library’s current approach to information literacy development lies in its diverse range of approaches and is grounded in the willingness of librarians to undertake the teaching of information literacy skills at any time and in whichever format is requested. However the current program is often not intentionally designed as a cohesive part of the curricula structure and does not give all student equal opportunities to develop information literacy skills.

The Information Literacy strategy seeks to build on existing strengths, particularly the positive partnerships between academics and library staff, but to do so in a more scalable, sustainable and systematic way. The recommended strategy would be implemented as a whole of University activity, strongly based in discipline specific, embedded academic tasks and supported by informal and co-curricula activities.

Process
The Library’s Information Literacy Coordinating Committee (ILCC) accepted the challenge of drafting the strategy in 2009. The ILCC includes a representative from the Learning and Research Services staff at each campus, as well as the Library’s Educational Designer, providing a comprehensive cross-campus perspective and allowing a channel for feedback from all Learning and Research Services (LARS) staff. Members of this Committee have also been involved in the review of the Library’s Information Literacy Policy and development of the Information Literacy Framework in 2008.

Environmental scan
The Committee began with a broad scan of recent literature available on the purpose and content of information literacy strategies, including any examples of existing strategies at other universities. An audit of current practices at each campus was also conducted, with each LARS team meeting to discuss what was successful and challenging about their current approaches and what future models of support may be desirable.

Workshop to explore issues
A summary of these discussions was distributed to 14 staff invited to a workshop on June 1st at the Bundoora Library. Members of the ILCC, selected LARS staff, representatives from the other working groups on the Building Blocks project and invited academic staff met on June 1st to discuss the following questions (see Workshop Program, Appendix 1)
Unfortunately only one academic staff member could attend the Workshop but another two provided feedback individually. Focus groups were held with small groups of academic staff at the Bundoora and Albury-Wodonga campuses to provide further feedback on the main issues identified.

Discussion paper
Members of the ILCC met in Shepparton on July 13th, 2009 to review the large amount of discussion and feedback available and to draft an Information Literacy Strategy (see Writing Workshop program, Appendix 2). Members also drafted a Discussion Paper to provide background information and a rationale for the development of an Information Literacy Strategy.
Two members of the Committee agreed to write a final version of both documents, with editing by all committee members. Both documents were then distributed to members of the June workshop, who had agreed to act as critical friends.

Feedback and editing of draft Strategy
The Committee met to review the feedback from the critical friends and then substantially amended documents were distributed to all LARS staff and all members of the Library Policy Advisory Committee for comment.

The Committee met once more to review the feedback from LARS staff. Further changes were made to the draft Strategy and an email sent to all LARS staff to provide feedback on some of the common issues raised (see Appendix 3: Feedback to LARS staff).

Distribution of draft Strategy
To encourage the wider University community to become familiar with the main tenets of the draft Strategy, a two page summary was created for distribution. Embedded in the summary were links to the full Information Literacy Policy, Strategy and Framework and to Discussion Paper.

Both these documents were loaded onto the project blog, created to keep the University community informed on the Library's Building Block project. http://www.lib.latrobe.edu.au/building-blocks/

Consultation with academic staff
The summary of the draft Information Literacy Strategy was formally presented at all Faculty Committee meetings, Library Liaison meetings at Bundoora, Bendigo and Albury-Wodonga, Library Committee, the Cockatoo Club and the Albury-Wodonga Campus Academic Development Committee. Learning and Research Services staff have also been encouraged to discuss the draft Strategy with individual members of academic staff.

The draft Strategy was promoted in Library News, Library Link and the Library Blog. The draft Strategy was also be presented at the Learning and Teaching Colloquium in December.

Feedback from each of these presentations has been overwhelmingly positive of the concept (see summary of committee feedback, Appendix 4). Specific questions raised have informed the development of actions emanating from the Strategy.

Issues arising
Although the Strategy was completed on time, it took longer than expected to identify the key issues and provide opportunity for adequate discussion, prior to the drafting of a strategy. The drafting process also took longer than expected as members of the ILCC tried to reach consensus over the recommended approaches and explain these approaches clearly in writing. The cycle of creating, feedback and editing, however, helped members of the ILCC to confirm and clarify the principles of the Strategy. It is expected that this process of continuous evaluation will continue as the Strategy is implemented.

Many of the questions which have been raised are related to the implementation of the draft Strategy. While the preferred approach has been outlined, the details of implementation cannot be confirmed until the level of commitment by the wider University community is known.
Recommendations

1. The draft Strategy is enshrined in University policy and it principles adopted by the University.
2. The Strategy is implemented by the Library in partnership with each Faculty.
3. The Library develops an action plan for implementing components of the Strategy in 2010

The action plan will include the following actions suggested in the draft Strategy:

For undergraduates:
- Develop a diagnostic tool for establishing baseline entry skills of commencing first year
- Use Information Literacy Framework to identify threshold foundation skills common to all undergraduate studies (eg: locating items on a reading list)
- Develop online modules to deliver foundation inquiry/research skills instruction, embedded in cornerstone units where they exist
- Create a quiz which can be used to demonstrate mastery of the identified foundation skills.

For postgraduates:
- Work collaboratively with the Graduate and Research Office to develop and update the Postgraduate Essentials website, including the development of interactive links in this program as a platform for further support from Faculty Librarians.
- Develop an online checklist for self-assessment of core skills for advanced research to assist students in identifying areas for further development

For staff:
- Develop a program of research skill seminars to be offered across the Library using a range of appropriate formats
- Improved communication and promotion of existing resources and services
- Develop a program for resource familiarisation and skills enhancement
- Develop strategy for working more closely with academic staff in a systematic way

Linda Sheridan (Chair, Information Literacy Coordinating Committee).
Fiona Salisbury, Claire Brooks, Iris Perkins, Maureen Speed, Tracy Robertson.
Project Part 2: Action Research: Health Sciences evaluation

Aim and rationale

In 2009, the Health Sciences Faculty implemented a new common first year (CFY). In partnership with the Faculty, the Library redesigned the information literacy program for first year students so that was aligned with the enquiry-based learning design of the new curriculum and provided students with an appropriate level of information literacy skill development.

The first year health sciences program involved embedding library research tasks into a cornerstone unit (e.g. structured research tasks, facilitated reflection on the research process, online modules, online quiz etc). Collaboration between the Library and the Faculty ensured that a scholarly approach was applied to finding a range of types of materials. Instruction in the information literacy program was primarily\(^2\) delivered via online modules\(^3\) and assessed by a randomised online quiz\(^4\).

The aim of this part of the project was to evaluate the CFY information literacy program in order to inform development of information literacy strategy by field testing a new model.

Process

In order to learn as much as possible about the CFY information literacy program the Library conducted an evaluation of the program and Library services which were developed in response to the needs of the new curriculum. This gathering of quantitative and qualitative data provided a substantial picture of the stakeholders’ experiences in three key areas.

1. Scholarly Literacy
   Data was collected to initially determine the level of scholarly literacy of incoming first year students and then to assess the impact of online information literacy modules and other library support on student skills and graduate attributes development.

2. Use of Library Services & Resources
   Data was collected on the use of the Library services and resources during 2009 by this cohort.

3. Stakeholder Feedback
   Qualitative data was collected from key stakeholders on the organisational, institutional and learning processes.

1. Scholarly literacy of incoming students & impact of Library support on student skills

In order to examine students’ knowledge and skills and map improvement in library research capabilities, students were tested at three points in the 2009 academic year:

- **March** - pre-experience survey (20 questions, 1000 usable responses, 60.6%)
- **May** - assessment quiz (15 questions, 90.7% of students completed)
- **September** – post-experience survey 20 questions, 1083 usable responses, 65.5%)

The pre/post-experience surveys included 11 identical questions that were designed to test respondents’ knowledge and understanding of scholarly information seeking. The surveys

\(^2\) Students were able to access a variety of library support, and perhaps peer support, in addition to the modules
\(^3\) Health Sciences Information Literacy Modules: [www.latrobe.libguides.com/health_sci](http://www.latrobe.libguides.com/health_sci)
\(^4\) Quiz was worth 5% of assessment of cornerstone unit
and quiz questions correspond with the foundation level of the La Trobe University Library Information Literacy Framework.\(^5\)

While it is evident that the vast majority of students could not demonstrate these sorts of threshold skills when they commenced their studies in health sciences, the various components of the information literacy program (e.g. structured research tasks, facilitated reflection on the research process, online modules, online quiz etc) have contributed to an improvement in library research skills over the course of the year.

Overall there was improvement in responses between the pre- and post-experience surveys. A selection of results comparisons for particular questions is shown in table 1. The question types which show an opportunity for even further improvement can be the focus of further development for this cohort in second year and beyond\(^6\)

Table 1. Pre and post experience survey - selected results comparison

<table>
<thead>
<tr>
<th>Question type</th>
<th>Pre-experience result(^*) # Mar 09</th>
<th>Post-experience result(^*) # Sept 09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal article citation</td>
<td>23% correct</td>
<td>39% correct</td>
</tr>
<tr>
<td>Referencing</td>
<td>28% correct</td>
<td>39% correct</td>
</tr>
<tr>
<td>Boolean searching AND, OR</td>
<td>37% correct</td>
<td>48% correct</td>
</tr>
<tr>
<td>Evaluate an internet site</td>
<td>24% correct</td>
<td>38% correct</td>
</tr>
<tr>
<td>Peer-reviewed journals</td>
<td>4% correct</td>
<td>17% correct</td>
</tr>
</tbody>
</table>

The quiz was a formative exercise which consisted of questions which were tailored to the content in the Information Literacy Modules. Results overall show an average score of 12.15 out of 15, the best of three attempts being taken as the score. A selection of quiz results for question categories similar to those in the surveys, show very positive outcomes for the students.

Table 2. Quiz - selected results for categories

<table>
<thead>
<tr>
<th>Question category</th>
<th>Quiz result category(^*) # May 09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finding items on a resource list</td>
<td>71% correct</td>
</tr>
<tr>
<td>APA Referencing</td>
<td>88% correct</td>
</tr>
<tr>
<td>Planning a search</td>
<td>80% correct</td>
</tr>
<tr>
<td>Internet information</td>
<td>90% correct</td>
</tr>
<tr>
<td>Finding peer-reviewed journal articles</td>
<td>79% correct</td>
</tr>
</tbody>
</table>

\(^*\) Figures have been rounded

\(^\#\) The pre/post-experience knowledge questions (not discipline tailored) were identical, however the Quiz questions were tailored to health sciences topics; students’ results were the best of 3 attempts and the figures here reflect the % correct for the question category overall.

The contribution of the information literacy program to the foundation development of the inquiry/research graduate attribute is also reflected in student and staff comments and ratings

\(^5\) La Trobe University Library Information Literacy policy and Framework: http://www.lib.latrobe.edu.au/about/infolit.php

\(^6\) Question design flaws, evident during analysis of answers for some questions like ‘evaluate an internet site’, were also seen to have an impact on results
from the Library’s post-experience survey and the Library survey of Faculty of Health Sciences staff.

“I am able to effectively use the Library catalogue to find electronic resources” - 69% (737) of respondents in the student post-experience survey rated this statement either strongly agree or agree.

“I am confident in using Library resources to find information for my university assignments” – 60% (638) of respondents in the student post-experience survey rated this statement either strongly agree or agree.

“Embedding of information literacy skills in a subject (for assessment) was beneficial to students”. – 60% (9 of 15) of respondents in the Library survey of Faculty of Health Sciences staff’s experiences of library support to CFY, rated this statement either strongly agree or agree. 14-26 October 2009.

“The information literacy information is excellent” – a comment representing several comments in relation to ‘What worked well’ question in the Library survey of Faculty of Health Sciences staff’s experiences of library support to CFY. 14-26 October 2009.

Refer to the full reports for further detail:
Appendix 8 - Pre-experience survey report
Appendix 9 - Pre/post experience survey: final report
Appendix 10 - LMS Quiz results report

2. Use of the Library and resources

2.1 IL Modules

Use and usefulness of IL modules

Statistics on the use of the modules for 2009; 13,155 hits in total7 (Jan – end Oct 2009) indicate substantial hits on particular modules (ranging from 857-1793). As shown in the modules usage data table below the usage peaked at March when the semester began and then May when the Information Literacy Quiz was conducted. Those modules with the highest statistics were: Referencing with APA style; Finding items on a resource list; Finding journal articles by topic, all of which had embedded links in unit materials within LMS of a first year subject. Can’t I just google? was the next highest. It is evident that embedding specific links to modules positively affects usage.

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7 Modules are available from the Library website and the hits may not all have been CFY students
Modules usage data 1 January – 31 October 2009

Although there were specific embedded links in unit materials, some students may not have been able to find them as evidenced by this comment.

“Modules I did use were extremely helpful, easy to follow, and really helped my research techniques. Fantastic. It would be good if there was more info about them and they were easier to find so I could have utilized them earlier” comment from the student post-experience survey run September 7-14 2009

More explicit promotion of the modules to the students and a review of the links to the modules, including the placement and labelling of those links within the unit materials in LMS would clearly be of benefit.

In terms of usefulness, in the post-experience survey of students (Q8) the top three modules considered most useful were:
- Referencing with APA;
- Finding journal articles by topic and
- Finding credible internet information.

Usability testing conducted with 21 CFY students in May/June 2009 resulted in the following feedback:
- 78% of participants gave positive feedback about the modules in terms of usefulness, helpfulness, design, content, multimedia and language and practice exercises.
- 20% gave feedback that navigation, design and promotion of the modules in workshops could be improved.
- When asked what worked well in terms of the ‘Can’t I just google?’ video, a majority found the video “appropriate” and “easy to understand”.

In addition, in the Library survey of Faculty of Health Sciences staff’s experiences of library support to CFY, 66.7% (10 of 15) of respondents rated the statement “The online information literacy modules were useful for teaching necessary skills to students” either strongly agree or agree. 14-26 October 2009.

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8 2% of feedback was neutral
Effectiveness of IL modules

Usability testing conducted with 21 CFY students in May/June 2009 revealed that the modules were moderately effective in assisting students to achieve success with a task. Labelling and design of modules led a majority of participants of the testing to an appropriate module (71%) and pathway (67%), however applying the module guidance successfully was evident in just over half the participants (57%) for one step actions, and less effective in more complex actions (27%), like choosing and accessing a journal database for a topic search.

Results show that pathways within the modules (including use of tabs and sub tabs) could be improved, however the successful use of internal links to the following page was a positive finding, perhaps a way to address an aspect of the pathway issue. Visuals and multimedia content were well received by the participants, indicating that enhanced and increased use of multimedia objects would be well received. Specific data on what aspects appeared to work or not, and the frequency and severity of issues which evidently affected achievement for participants, has been explained in the full usability report and will inform the review and improvement for 2010 to increase engagement and effectiveness for students.

Refer to the full report for further details:
Appendix 11 - Health Sciences Information Literacy Modules Usability Testing Report

2.2 Collections

The collection development aspects of the Health Sciences CFY was also evaluated in this part of the project. Of particular interest were four aspects of the Library’s collection development activities:

1. multiple copies policies for recommended and prescribed readings
2. provision of materials for wider readings for essay and enquiry tasks
3. cross campus access
4. expanding the electronic books collection in the Health Sciences area.

Collection development and the common first year

Providing multiple copies for large student cohorts across all campuses can present a number of challenges. The 2008 Library client satisfaction survey revealed general dissatisfaction
among students with the number of multiple copies in the collection. To improve provision of multiple copies in the Health Sciences CFY, several measures were put in place:

1. Library staff worked closely with the academics developing new units to ensure recommended materials were in place at all campuses in time for Semester one 2009. Health Sciences CFY– Resource lists were prepared by Library staff cross campus and were systematically treated, to ensure all recommended and prescribed materials were added to the collection and catalogue:

   a. Ereserve (to be digitised)
   b. Book chapters (with one chapter only listed)
   c. Journal articles (only in print or not held)
   d. Ejournals available (no reserve action required, as these were not separately or specially linked)
   e. Internet sites/pdf reports to link to in the catalogue
   f. Books (either whole books listed or with more than one chapter)
   g. AV type material

2. The multiple copies formulas were reviewed at all campuses, and at Bundoora the following policy revisions (with Health Sciences examples) were made on a trial basis for review after 12 months:

   a. for high use and multiple copies titles, the formula for purchase was increased to one copy per 30 students with a maximum of 30 copies. In cases where an e-version was available and was single user access, 1 e-copy was treated as equivalent to four print copies and no more than four copies were purchased in e-format.
   b. 50 copies of set/prescribed texts if needed for more than one unit (e.g. Marieb’s Human anatomy & physiology) were also purchased as a trial.
   c. 20 copies of additional/recommended readings e.g. for enquiries (e.g. Effective writing in psychology: papers, posters, and presentations) were purchased.
   d. five copies or less of books where a single chapter had been recommended and placed on e-reserve were purchased, or when the Library had an e-copy of the book (e.g. Human frontiers, environments and disease: past patterns, uncertain futures).

   The copies were distributed as follows:

   **If 30 copies:** 10 RESERVE, 15 on seven day loan; five 14 day loan (e.g. to allow some of the demand to show up via the purchase alerts function in Innopac)
   **If 20 copies:** 10 RESERVE, seven on seven day loan and three 14 day loan (ditto).

3. A policy and procedure for automatically providing an e-copy if available was instituted – estimated to be available for available for 10-15% of materials (the actual figure was closer to 5-10%). This policy assisted both cross-campus and 24/7 access for students and staff.

4. The impact of Innopac (Library Management System) requesting on demand and use was to be monitored and relevant committees looked the extension of holds to 3 and 7 day loans, but decided not to pursue this option.

5. The possibility of extending the hold quota was reviewed and a decision was made by Client Services Committee at the December 2008 meeting. The quota for staff was increased to unlimited, and all other patrons were increased to eight. While these decisions were not explicitly made to assist the Common First Year resourcing, they did have an impact on use and the perception of availability.

6. The Library purchased and promoted ebooks related to the enquiries:
• Doodys Core collection of 117 Health sciences electronic monographs,
• approximately 300 titles were purchased on the Myilibrary platform to assist students for their essay and research enquiries,
• Net library – a trial of patron driven acquisition of electronic book titles was another way in which the Library used Web 2.0 technologies for the quick addition of student and staff selected titles to the collection. Approximately 115 titles in the area of Health Sciences were selected in this way during the first half of 2009.

At some campuses extra copies of high demand materials were not always placed in the General collections for loan. In contrast the Albury-Wodonga practice is as follows; if there is only one copy, the copy goes to Reserve, but as most of the health sciences material was ordered in multiples there would be one copy on Reserve, one on three day loan and one in the General Collection. This is similar to the Bundoora practice which always provided a mix of loan periods across the multiple copies of health titles.

At Bendigo the practice is if there is only one copy which is in high demand it will automatically go on Reserve. Multiple copies for the Health Sciences were placed in Reserve for either three hour loan or 24 hour loan. At the end of semester one, due to low usage statistics, some copies were placed back on the shelves for general borrowing.

A broad assessment of these changes was planned, incorporating:
• feedback from the common first year participants: academic, student and general staff,
• loan, cost and use figures, e.g. electronic “turnaways” figures produced by the major e-book vendors and print Innopac purchase alerts, to assess student demand on the collection.

User feedback about Collections - Students
The Library sought feedback from students via open ended questions attached to questionnaire surveys. There was no specific feedback about multiple copies in the post experience questionnaire, nor any anecdotal evidence that this was an issue the Library needed to tackle.

Comments relating to the Library collections include:
   Resources too old
   Reserve is useful - I can always find what I want
   The most difficult thing is finding books

Perhaps the most interesting data comes from a comparison of the pre and post experience surveys for questions about expected and actual Library use. While 94.8% of new Health students expected to borrow books, only 63.5% actually did so by the end of September when the post experience survey was run. In addition, of the 69.4% expecting to use electronic resources; only 52.8% actually used them in the first nine months of their University course.

User feedback about Collections - Academics
A cross campus survey of academic staff carried out in October 2009 asked two questions about resourcing the Common First Year course:

   The Library holds useful and relevant electronic books for the Common First Year.
   The Library has sufficient multiple copies of materials for the Common First Year.

Fifteen academics responded to these questions on a five point Likert scale, from strongly disagree to strongly agree. While there was very good agreement, e.g. 80%, that the Library had a useful collection of electronic books (46.7% strongly agreed and another 33.3% agreed), the results for the multiple copies question were more disappointing. Only 33.4% strongly agreed or agreed that there were enough multiple copies with 40% neutral.
In response to the question “what worked well in the Library’s support to the Common First Year”, e-chapters, journal access and electronic resources were mentioned. One academic suggested that “the Library promotes La Trobe Staff publications”, while three others commented on multiple copies:

- Increase the number of texts available
- Increase resources in Library, also multiple copies of textbooks, putting some key texts on three hour loan, increasing the e-book collection
- Students wanted more copies of the textbooks available for borrowing

It would have been particularly useful to know the campus of the respondent as the multiple copies practices differ from campus to campus and relevant actions would depend on local conditions. Further work on teasing out this issue is needed – perhaps via a targeted phone survey to delve into this area.

**Purchase alerts data**

Innopac purchase alerts are a way of tracking when there is high demand on 14 day loan items. These data are collected by program and can be output at any time. In 2009 these reports were monitored monthly in Semester one. In addition the Library tracked data from the e-book vendors – NetLibrary and MyILibrary – to ensure that additional copies of e-book titles were ordered if warranted by the use data.

The data collected for Semester one 2009 indicate that the Faculty of Health Sciences accounted for few of the purchase alerts, since of the first 150 titles showing up in the purchase alerts, only 16 or 10% were from this Faculty. In addition, none of the Common First Year texts, as identified by the Library, were in this group.

The e books usage data for Semester one tell a similar story. Very few first year electronic texts were available – less than 1% - and additional electronic copies of these were purchased as required.

**Use of multiple copies of Common First Year texts at Bundoora**

Based on both anecdotal and Library client satisfaction survey user feedback, textbooks were given a mix of four different loan periods, and at Bundoora these included:

- three hour
- three day
- seven day
- 14 day

Data from several titles treated in this way indicate that the three hour (Reserve) items had the greatest use. While these figures are affected by the total possible number of loans for each loan category (e.g. nearly 60 Reserve three hour loans are possible for each 14 day loan), the data also indicates that students were using Reserve copies when there were one and two week loan copies available. Indeed the maximum number of one and two week loans possible was never reached.

Since there were up to 20, 30 and even 50 copies of some titles listed in the catalogue, it may also be that students never scrolled down to locate the longer loan copies. Another hypothesis is that texts are often heavy and students wished to have a copy to consult while they were in the Library, using their personal copy at home. In 2010 with the introduction of a new discovery tool for users, tracking this pattern and assessing its impact on the use of various parts of the collection will be critical.
A snapshot of the cross campus loans and renewals to the end of October for one key text “Vander's Human Physiology” are as follows, showing the relative cross campus use, based on the number of students enrolled at each campus:

<table>
<thead>
<tr>
<th></th>
<th>Bundoora 1145 enrolled</th>
<th>Bendigo 260 enrolled</th>
<th>Albury Wodonga 80 enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reserve</td>
<td>10 copies</td>
<td>2 copies</td>
<td>only 1 copy</td>
</tr>
<tr>
<td>Average loans/copy</td>
<td>35.3</td>
<td>16.5</td>
<td>11</td>
</tr>
<tr>
<td>Range of loans/copy</td>
<td>18-55</td>
<td>13-20</td>
<td>11</td>
</tr>
<tr>
<td>14 day loans</td>
<td>20 copies</td>
<td>4 copies</td>
<td>NIL</td>
</tr>
<tr>
<td>Average loans/copy</td>
<td>14.2</td>
<td>12.5</td>
<td>Na</td>
</tr>
<tr>
<td>Range of loans/copy</td>
<td>9-20</td>
<td>6-21</td>
<td>Na</td>
</tr>
<tr>
<td>Total for all copies</td>
<td>30 copies</td>
<td>8 copies</td>
<td>3 copies (one 3 day, one 7 day)</td>
</tr>
<tr>
<td>Average loans/copy</td>
<td>21.6</td>
<td>13.8</td>
<td>8.3</td>
</tr>
<tr>
<td>Range loans/copy</td>
<td>9-55</td>
<td>5-23</td>
<td>7-11</td>
</tr>
</tbody>
</table>

*does not include in house use e.g. photocopying of chapters in Reserve/Short loan areas

2.3 Help desks statistics

There has been a downward trend pattern in the number of Information Desk/Research Help Desk queries over the past few years, which continued in semester one, 2009, albeit at a slower rate. This is shown in the table below. Over this time period Library clients have been increasingly able to choose from a range assistance such as: service desk; Ask-a Librarian email; online chat; and LMS Library discussion boards in some subjects.

![Semester 1 - Total Information/Research Help Desk Queries - Albury-Wodonga, Bendigo, Bundoora](chart)

Desk statistics were monitored for semester one in order to investigate what impact the Health Sciences CFY (Common First Year) had if any on the face-to-face queries. Of the total Information Desk/Research Help Desk queries for semester 1 2009, the percentage of desk queries relating to the Health Sciences Common First Year was:

- Albury-Wodonga 7%,
- Bendigo 1%
- Bundoora 7%

A more detailed look at the months at the beginning of the semester (particularly March) for 2008 and 2009 for Albury-Wodonga, Bendigo and Bundoora show an increase overall,

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9 Albury-Wodonga, Bendigo and Bundoora Library Desk statistics are included in the discussion. Statistics not reported on here for Mildura and Shepparton.
however without detailed comparison figures from 2008 for health sciences queries, it cannot be known if this was attributable to the HS CFY or not.

2.4 Library discussion boards in the Learning Management System

To enhance the information literacy program which had primarily been delivered in semester one, a Library Discussion board was run in the learning management system (LMS) in semester two. Between 19 August – 6 November 09, 114 library-related queries were posted (which is 67% of a total 169 postings).

Analysis of the Library discussion threads reveals that participation in these discussions is a key contributor to promoting a sense of community and cooperation amongst users relating to library matters.

It is interesting to note (see Table 5) that the discussion threads initiated by the library did not result in further discussion or response from students. Almost all the discussion threads initiated by students, however elicited a response or started a discussion between more than two people. The success of these conversations requires active and enthusiastic participation from the librarians involved because while students may not respond to library threads library staff must be active in participating in student threads.

<table>
<thead>
<tr>
<th>Where discussion thread initiated</th>
<th>Number of threads</th>
<th>Threads with discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library staff</td>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td>Academic staff</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Students</td>
<td>50</td>
<td>57</td>
</tr>
</tbody>
</table>

Out of the 81 threads on the discussion board (see Table 6) the most frequent category type were notices posted by library staff. There were several library staff posted notices which prompted direct emails to individual faculty librarians for assistance. This activity within the Library discussion board extended and prompted students to seek help in other ways. The other six categories of threads were student initiated discussions. These discussions included a range of topics with traditional-style reference queries being the most frequent such as Finding information on a topic, Finding journal articles and Referencing.

<table>
<thead>
<tr>
<th>Categories:</th>
<th>Number of threads by category</th>
<th>Number of Posts per category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library notices</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Reference/research queries</td>
<td>16</td>
<td>37</td>
</tr>
<tr>
<td>Turnitin</td>
<td>14</td>
<td>38</td>
</tr>
<tr>
<td>Citation style</td>
<td>12</td>
<td>32</td>
</tr>
<tr>
<td>Locating journals</td>
<td>11</td>
<td>23</td>
</tr>
<tr>
<td>Essay format</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Using/navigating LMS</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>81</strong></td>
<td><strong>169</strong></td>
</tr>
</tbody>
</table>
The postings and threads, a number of which were answered by students helping each other (as seen in table 7) and which can be seen by all enrolled within a subject section, indicate a well used service that would be of benefit in semester 1 in the future.

Table 7

<table>
<thead>
<tr>
<th>Thread category</th>
<th>Number of Threads</th>
<th>Number of Posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnitin</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>Reference/research queries</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Citation style</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Essay format</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Locating journals</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Using/navigating LMS</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>15</strong></td>
<td><strong>61</strong></td>
</tr>
</tbody>
</table>

A student comment sums up the benefit of including library discussion support in LMS:

“Great information and now I have a much clearer understanding of how I can access information through the database” - Student comment after being assisted on a Library Discussion board within the LMS of a first year unit, for assistance with finding journal articles. 26 August 2009 11:11 AM, Library Discussions Board, Section A, HLT11PB.

3. Stakeholder Feedback

Opportunities were provided for Faculty of Health Sciences’ staff and students and library staff to give feedback about the impact of the Library’s contribution to the common first year. A common thread amongst all feedback was the suggestion to promote the Library’s modules and other support (including Library Q & A sessions) to a greater extent so that students can maximize the use of the resources and assistance which is available to them.

3.1 Student feedback

Feedback from students was elicited from: usability testing; pre and post experience survey responses and comments and the LMS library discussion board in semester two. Some of the student feedback quotes have been already mentioned in this report. In summary, there were a mixture of positive and negative comments, and suggestions relating to library modules and library support.

Comments about the information literacy modules ranged from: ‘difficult to access’; ‘didn’t know they were available’ and ‘I don’t have time to invest’; to ‘very useful for doing health sciences research’; ‘were easy to use’ and ‘really helped my research techniques’.

There were several comments about lack of computers or printer problems and lack of group study spaces in the Library.

An number of students commented that finding journal articles was ‘too complex and difficult’ and there were suggestions that ‘the library has good material but further knowledge to find the material needs to be shown to everyone’ and ‘it would be handy to make workshops available for first years to teach us and so we can ask questions then’. It is evident from these comments that some students were not aware of the library Q & A sessions offered in semester one and this is also reflected in the low attendance at these sessions. Student feedback will be reviewed for the planning of library support to the 2010 first year cohort.

Refer to the full reports for further details of student responses and comments:

Appendix 8 - Pre-experience survey report
Appendix 9 - Pre/post experience survey: final report
Appendix 11 - Health Sciences Information Literacy Modules Usability Testing Report
3.2 Faculty staff feedback

In order to gain a picture of Faculty staff experience of the Library’s involvement in the Common First Year, the Library ran an online, cross campus Health Sciences Faculty staff survey between the 14 and 26 October 2009. Fifteen staff members completed the online survey which consisted of Likert scale statements and open-ended questions. Overall the Faculty feedback was very strongly positive.

Selected responses from Faculty staff are provided throughout this summary, the majority of responses (13 of 15) being very positive overall. Staff were overwhelming positive about the library/faculty interaction citing in particular Information Literacy online assistance, electronic resources, communication initiated by the Library in relation to the CFY, and library staff and responsiveness to student needs.

“The Library staff responded well to the needs of CFY students” - 78.6% (11 of 15) of respondents in the Library survey of Faculty of Health Sciences staff’s experiences of library support to CFY, rated this statement either strongly agree or agree. 14-26 October 2009.

What worked...
Responses to ‘In your experience…What worked well…’ can be summarised as follows:

- **Information literacy** (4) e.g. ‘The information literacy information is excellent’ & ‘Information literacy was very good – more emphasis maybe required on this area because students continued to make errors…’
- **Electronic resources** (2) e.g. ‘e-chapters and journal access are excellent’; ‘Access to journals is very appropriate’
- **Library Discussion board** (2) e.g. ‘Discussion board on LMS seemed to be well appreciated by students’
- **Approachability of staff** (2) ‘Approachability of the staff, students reported how staff were very willing to help’
- **Faculty librarians & other library staff** (4)
- **Communication…initiated by library** e.g. ‘Good communication between library and CFY campus coordinator, initiated by the library was invaluable’

What could be improved...
Responses to ‘In your experience….What could be improved…’ can be summarised as follows:

- **Librarians present at a lecture** (2)
- **Increase texts** (3)
- **List of available resources**
- **Library workshops for facilitators and students**
- **Space for group work**
- **Consistency in LMS sites to promote Library help**

Since the collections usage data for selected prescribed texts does not reflect a lack of multiple copies it is possible that improvements may be needed in the instruction for students (and staff) regarding recognising additional copies.

Overall the feedback from Faculty staff about the Library’s support to CFY was very positive. It also helps the Library reflect on internal processes and communication as well as emphasising the importance of clear and timely communication with Faculty staff. It is clear by this statement “Make them take advantage of what you offer!” that further explicit promotion of Library support would be of benefit (whether it be through lectures or facilitator/student workshops or other methods). Although there was much positive feedback about library staff, information literacy and library resources, there is room for further refinement of library support to CFY, which will be the focus for the 2010 cohort of first year
Library staff commented favourably about their involvement in the common first year as a whole. Key Factors included:

- Commitment of most of the academic staff to work with Library in embedding IL skills into curriculum.
- Coordination of Library CFY initiatives, and faculty communication (by key personnel/faculty librarian) was critical to successful implementation.
- Creation of libguides, and embedding of these in LMS.
- Checking and ordering of multiple copies of books, and digitisation of resources.
- Collection building around the enquiry topics.
- Library access to LMS.
- Use of Sharepoint as a central resource.

What worked…
In response to ‘what worked well’ these issues were amongst common responses:

- Collections
- Communication
- Cross campus issues
- Sharepoint
- Library service desk support
- Library Discussion

Comment about what worked:
"The health sciences librarians cross campus working together and supporting each other with the support of other expert staff"

The CFY had a significant impact on the Library affecting not only the collection development, physical space and information literacy needs of students, but also the working relationships, communication, cross campus working relationships and service provision, project management and other factors internal to the Library.

What could be improved…
In response to ‘what could be improved’ these issues were amongst common responses:

- Physical space for group work
- Promotion of modules
- Lack of attendance at Q & A
- Library/Faculty LMS Communication
The major issue which concerned a large number of library staff was determining how to best meet the information literacy needs of students. Issues included concern that the online information literacy modules were not easy to find on the LMS, that there was no additional support in the LMS for students using the modules and that they were not promoted sufficiently. Steps to remedy these issues were undertaken. For example a Library discussion board was established in one second semester unit, face to face Q & A sessions were offered on all campuses, and usability testing invited students give feedback about the information literacy modules.

Issues that were regarded as being of high priority to focus on in future included:
- Adequate resourcing of further curriculum reform projects,
- Maintaining close working relationships with faculties, individual academics and key processes of curriculum reform.
- Communication, flexibility and team work amongst library staff.

These issues are or will be addressed in the recommendations and by the actions taken as part of the action research approach.

Overall library involvement in the common first year was perceived very positively by the library staff who completed the surveys or provided feedback in other ways. A considerable number of suggestions for improvements in the future were offered.

**Recommendations**

An evaluation of the Library services and programs designed for the CFY indicate that the Library has made a significant contribution to the foundation development of first year students’ scholarly information seeking skills. It is evident that a multi-faceted approach in which a variety of support is provided is beneficial for students to access when and where it is required. Stronger marketing of a number of aspects of the library support to CFY has emerged from across the data.

In short the outcomes that emerged are mainly related to these topics:
- Reviewing modules in light of findings
- Marketing modules and library resources and support
- Planning and tracking information literacy programs in relation to what is known about information seeking entry skills and progress in first year
- Reviewing the quiz
- Maintaining and reviewing where appropriate collections strategies for large cohorts in the light of evaluation data
- Continuing to work with faculty staff to further refine the embedding of information literacy skills in CFY

To further improve the information literacy program and library support for future cohorts of the CFY the following recommendations should be considered. (Further details are in the full reports, Appendices 8-12)

**Recommendations: Library pre and post experience survey: final report**

1. Review the Information Literacy modules to enhance and improve instruction.
2. Market the Information Literacy modules more effectively to the first year Health Sciences cohort in 2010.
3. Investigate enhancing pathways from the Library web page to ensure there is efficient and effective access to the scholarly databases.
4. Review all pre and post-test results by discipline in consultation with relevant faculty librarians and academic staff to target areas of need and tailor information literacy instruction to fill these gaps.
5. Plan information literacy programs for this cohort in second year to fill the skill gaps identified in the survey.
6. Track the progression of information literacy skill development in this cohort by conducting another survey in October 2010 and beyond.
a. to ensure areas of need are identified and addressed.
b. to track the deep learning of these skills.
c. to track students in targeted groups e.g. disciplines or age.

7. Investigate a method of measuring improvements in Library support for the first year cohort in 2010 (i.e. improvements in the modules, marketing Library support at lectures and Library Discussion Boards).

Recommendations: LMS Quiz results report

1. Investigate the quiz becoming a hurdle requirement.
2. Check and review practice exercises in the modules to ensure there is sufficient modelling of similar quiz questions.
3. Investigate an increased use of ‘doing’ questions in which students need to perform an activity to get an answer.
4. Review quiz questions in view to providing clear explanation as to what particular module provides the guidance for that question type (as quiz if formative and to explicitly direct students to the learning resources provided for them).
5. Review quiz questions where students performed least well to identify issues with question design.
6. Review instruction in modules to include more multimedia learning objects that illustrate different types of scenarios, so skills can be demonstrated in a range of contexts to make transfer of new skills easier.
7. Retain use of question types which were well answered.
8. Consult with faculty staff regarding:
   a. the timing of the quiz and promotion of the modules as the guidance tool;
   b. how questions are randomised;
   c. the number of questions in the bank in relation to the cohort number;
   d. and if there was any faculty feedback from students or staff regarding the information literacy quiz.

Recommendations: Health Sciences Information Literacy Modules usability testing report

There were a large number of recommendations stemming from the usability testing findings. This is a select list with the full list being available in the usability report.

Modules
1. Reduce module density and text and improve layout.
2. Review the use of sub tabs and tabs – perhaps removing or linking to tab/sub tab content in an alternative/more explicit way.
3. Investigate module pathways and review all titles and headings to improve understanding of the pathways.
4. Investigate guidance in modules relating to selecting and searching databases to find journal articles by topic.
5. Investigate ways to promote the modules further via workshops, lectures, an LMS library discussion board in semester one, facilitator training, handouts, business cards or bookmarks etc. Retain links to specific modules in unit materials and consult with faculty staff to ensure optimum labelling and placement.
6. Consider the newly created generic modules from the Reusable Learning Objects part of the Project and incorporate any ideas or aspects which may enhance or replace the health sciences modules.

Multimedia items
1. Retain the use of video in the modules and the [can’t I just google?] concept overall.
2. Look for more opportunities to add instructional videos where appropriate.
3. Review all instructional videos for quality.
Library website
1. Retain the library website entry ‘Journal Titles’.
2. Consider changing ‘Articles via Databases’ to ‘Journal Articles via Databases’.
3. Databases by subject area: investigate removing the check boxes and LibXplore search box.

Recommendations: Collections

The 2010 introduction of a new search tool, Summon, and the BONUS+ program for undergraduates may have an impact on all of these recommendations.

1. Learning and Research Services, Health Sciences Team, Collections and Reserve staff at all campuses collaborate to further develop their liaison with the Faculty and individual academics in determining and ordering high use titles. This recommendation acknowledges that this liaison is easier to accomplish with large first year classes, using established teaching staff and more difficult when there is a plethora of medium sized units, and a changing mix of lecturing staff.
2. Each campus to review their policy in this area taking into account the data presented above and the academic feedback that students wanted more copies of the textbooks available for borrowing.
3. At Bundoora, review the number of copies allocated to each loan period, with a view to allocating additional copies to Reserve and seven day loans and fewer copies to the other categories. The data suggest that 50 copies of a text are not warranted and a maximum of 30 copies should normally be sufficient.
4. The use of multiple copies shows interesting patterns which would benefit from ongoing investigation in 2010. Consider a targeted phone survey of patrons, including questions on this topic, possibly coordinated with the 2010 Library client satisfaction (Insync) survey.

Recommendations: Health Sciences Faculty staff experience of the Library involvement in the common first year: Online survey report

1. Consult and collaborate with faculty staff to identify mechanisms which will increase awareness amongst both students and staff, of the information literacy program and library resources and support for 2010
2. Review library Q & A sessions with regard to labelling and marketing so that ‘at risk’ students will maximise use of available support
3. Review and improve guidance in Information Literacy modules to maximise effectiveness
4. Continue to work with Faculty staff to further refine the embedding of information literacy skills in CFY
5. Continue to seek feedback from Faculty staff through surveys and particularly focus groups or structured interviews with key personnel to assist in the improvement of the Library response to CFY

Action research: Health Sciences evaluation working group
Jenny Corbin (Coordinator).
Claire Brooks, Eva Fisch, Sharon Karasmanis, Fiona Salisbury, Chris Wanklyn.
Project Part 3: Reusable learning objects

Aim and Rationale

The Reusable Learning Objects part of the project developed and implemented a number of learning objects. The learning objects chosen were a range of complete generic information literacy tutorials and a librarian driven online assistance service.

The objective was to explore a range of existing learning objects which could be adapted and changed to support information literacy skills. The exercise was to gain an insight into the process, working in cross-campus collaborative teams, time involved, training requirements, technical support and software required. This subgroup’s brief was based on the assumption that the re-usable objects developed were to be a sample of possible re-usable objects that could be further developed and built upon to implement the Information Literacy Strategy.

The group initially struggled with the concept of what a ‘reusable learning object’ was and how these objects could be used and disseminated. The preliminary project brief had many possibilities, resulting in the group changing tasks and perspectives numerous times early on in the development stages. The concept of meeting the needs of an evolving Information Literacy Strategy also affected the subgroup’s focus.

To meet the timeframe of the project, it was important to stay focused on a concise set of goals and not to extend the scope of the project. Constraints overall of limited time to develop a variety of re-usable objects and the timely feedback from parts of the Project, has meant that further work needs to be done on the developed reusable learning objects. (This is reflected in the recommendations section).

Out of scope of the project was resolving possible broader issues around the management of University wide learning objects e.g. maintenance and updates, as well as University wide technical solution of storing learning objects e.g. repository.

Process

Initially a literature review (see Appendix 13) and an environmental scan of practical real world examples (see Appendix 14) was performed. Given this background investigation the team held a brainstorming workshop discussing these ideas and information. Early on in the discussion two clear tasks for development emerged from the range of ideas.

1. Generic Information Literacy modules targeting specific areas of skill or theme.
2. A Question and Answer system to help assist when students have a problem.

To manage and focus on these two tasks, the group divided into smaller teams to tease out ideas and develop these objects.

Generic modules

The group investigated an existing proven model of information literacy based tutorials. These comprehensively evaluated modules designed to teach information literacy skills were developed by a New Zealand consortium. These modules were bundled as a tutorial style learning object.

Preliminary work began in converting the modules for delivery at La Trobe as a ‘generic’ information literacy instruction. The modules have been delivered via existing library software ‘LibGuides’ by Springshare. This means that it was relatively easy for librarians to edit and customise in the initial development stage. The completed generic information literacy modules can be accessed via the LibGuides page:

http://latrobe.libguides.com/content.php?pid=74742
The modules can be used in various ways: as self paced, self directed, non-assessed, generic learning support; embedded as part of the teaching program of a faculty, including possible assessment or hurdle requirements; as part of a blended (online and face to face) program of information literacy; and in various other ways either by the library or in collaboration with academic staff at a subject, course or school level.

The group focused on and produced the following modules:

- Searching for Information:
  - Using the Catalogue
  - Using Websites
  - Finding Journal Articles
- Finding items on a reading list
- Evaluating Information Sources
- Ethical use of information
- Digital information literacy

These modules will form the basis of delivering foundation skills within the Information Literacy Strategy Framework.

**LibAnswers**

The group investigated various commercial products for Q&A type help services. The group finally settled on purchasing a new product called ‘LibAnswers’ by the same company that produces ‘LibGuides’. The advantage of this was the tight integration between both systems and the staff familiarity of operating these products. This method of a range of tips, suggestions and explanations follow a student directed approach and ties in closely with the online librarian assisted model of the Information Literacy strategy. The initial questions were distilled from questions asked via the existing ‘Ask a Librarian’ service and online chat as well as staff recommendations. The question and answer bank will continue to grow once it is launched and students begin asking live questions. Currently most answers are text based. However, over time more video and image based responses will be created. The video and image based answers have been re-used in the generic modules as well. The product can be accessed via: [http://latrobe.libanswers.com](http://latrobe.libanswers.com)

**What we learned**

This part of the Project highlighted the enormous effort undertaken to conduct and manage a small group in a cross-campus environment. The time taken to produce the outputs should not be underestimated for future activities. External organisational factors also hampered progress in regard to sourcing part time casual hours and staff commitment.

Innovation and the development of software expertise issues suggest that in order to support and sustain reusable learning object development, a small team of focused individuals should be responsible for the creation, development and re-purposing of reusable learning objects. Overall though, the content of reusable learning objects should form part of mainstream activities of Faculty Librarians as part of their role in delivering effective and inclusive information literacy skills.

Further exploration on how students will actually interact with and use the generic modules needs to be investigated. Student feedback will ultimately determine acceptance, use and effectiveness of these resources. Questions such as: Are these modules what the students require or need? Are these tutorials better to be broken up into short or long stepped tutorials? Should these modules sit inside the LMS? Do these materials need to be promoted in lectures by lecturers? Is there a need to make these part of the core curriculum and be accessed? How will library staff make best use these modules? Will they be stand alone, self paced? Will customised version be available for each faculty?, will need to be considered and
form part of ongoing discussions to fully address information literacy issues overall. Hopefully these questions will be answered as the Library moves forward and learns from the experiences of this part of the project.

**Recommendations**

1. Evaluation and usability testing of generic modules should be undertaken
   Evaluation and usability testing of the modules has not been formerly undertaken as part of the Building Blocks project. Proofreading has been carried out on the generic modules but broader evaluation strategies and feedback needs to be followed up. Although the modules were extensively tested and evaluated by the original New Zealand developers moving them into LibGuides may have impacted on their usability. The usability testing of the Health Sciences modules, also delivered using LibGuides has been undertaken concurrently, and so has not been available to fully inform the development of the generic modules.

2. Naming and promotion of generic modules
   A clear name and branding scheme be used to identify and promote these modules is recommended. This action should be carried out before full implementation of the modules. This should be a collaborative decision in consultation with the Faculty Librarians and Learning and Research Services staff. Naming suggestions such as; Library Skills Online; Research 101; Teach yourself research skills; Research Essentials etc. will need to be further explored.

3. Further align generic modules with the Information Literacy Strategy
   Because the generic modules and the Information Literacy Strategy were developed concurrently the modules need further evaluation to check alignment with the Information Literacy Strategy and Framework. It is anticipated that the modules will form the set of online foundations skills tutorials embedded in the first year curricula structure as outlined in the Information Literacy Strategy.

4. Development of additional modules
   Further development and prioritisation of modules is recommended in order to further align module content with the Information Literacy Framework. In addition implementing the Information Literacy Strategy as it relates to other specific groups (e.g. international and post graduate students) may require further module development. Development of additional modules, for example in the areas of writing business reports and writing scientific reports, could be targeted. Also any remaining topics not covered in the current Library Skills Online modules should be identified and developed.

   The subgroup strongly recommends allowing appropriate lead time for development and production of these further modules.

5. Replace Library Skills Online with the generic modules
   Once the modules have been fully evaluated along with any remaining additional modules to be developed, it is recommended that they will replace the current Library Skills Online modules.

   Factors that influence this recommendation are; easier maintenance and update methods via LibGuides; reduced associated costs; staff familiarity; improved site integration with the current Library Guides and LibAnswers; improved statistics and Web 2.0 versatility.
6. Implementation of LibAnswers

LibAnswers is an evolving product and can be built upon to align with changing student needs. It also supports implementation of the Information Literacy Strategy by reinforcing skills and library support in an online environment. It is recommended that LibAnswers replace the current “Ask a Librarian” service.

Maintenance of the supplied answers, creation of new and additional video screen casts and other forms of information delivery to better enable clear and appropriate library support will be required. Appropriate policies/procedures and documentation will need to be developed. Outstanding issues of staff rostering, cross campus integration and product administration will need to be addressed. Consideration of rebranding and promotion will also need to be considered along with a changeover/cut-over implementation plan.

7. Development of additional student support materials as required

Create appropriate just in time, point of need student support products such as job aids, help prompts or video screen casts. These can also be reused and embedded into LibAnswers, the online modules and the library website.

8. Professional development and training issues

It is recommended that library staff have access to and are trained in a range of software including LibGuides, LibAnswers, Camtasia Studio and Raptivity eLearning program. Production of modules relied heavily on the technical skills of staff member which resulted a workflow bottleneck. Adequate training via professional development and diversifying staff skills would alleviate this problem. In turn this would foster and encourage new ideas and extend the barriers of technical achievements.

9. Feedback/enhancements and administrative issues

It is recommended that future administration and maintenance tasks such as version control and editing rights are addressed. Ownership and general maintenance will have to be delegated. A suggested model could be to operate in the same way Library Skills Online is managed.

At the upcoming cross campus Learning & Research Services Conference, Faculty Librarians will view the generic modules and give feedback. It is also recommended that more detailed feedback is organised via team leaders of the Learning and Research Services Section, as well as student feedback and useability testing.

10. Support for consistency in bibliographic styles for La Trobe University

The variety of bibliographic styles used within the University is problematic for students. Different Faculties adopt different citation styles. This leads to difficulty in providing consistent instruction and presentation within the modules. This raises many questions related to consistency in bibliographic styles for La Trobe University. Where possible it is recommended that the Library contribute to future discussions on the efficacy of consistency of bibliographic styles.

Reusable learning objects working group

Anthony Flack (Coordinator), Heather Hulett (Coordinator).
Ann Copeland, Nicole Sackers, Claire Brooks, Sharon Karasmanis, Annette O’Brien.
**Project Part 4: Science, Technology and Engineering first year information literacy program**

**Aim and Rationale**

The aim of this part of the project was to develop a prototype and proposal to implement the information literacy strategy in the Science, Technology and Engineering first year curriculum. The proposed plan will result in embedding information literacy into the proposed 2010 Faculty of Science, Technology and Engineering (FSTE) cornerstone units, in order to develop FSTE graduates with capabilities in inquiry/research.

This proposal seeks to build on existing partnerships between academics and library staff in a sustainable and systematic way. The recommended proposal would be strongly based in unit specific, embedded assessment tasks and supported by online and face to face teaching.

**Process**

This part of the project also worked closely with the FSTE Firm Foundations in Science Project Group. Outcomes of the FSTE Firm Foundations in Science project include:

- Defining elements (academic and organisational) which will be common to all FSTE foundation units to provide a smooth transition to University study and equip students with the core academic skills needed for productive learning.

- Investigating staffing models for these units, and in particular looking at the requirements to provide intensive academic skills training for students who need extra support.

- Identifying effective support and training for staff to ensure alignment between unit objectives, teaching activities and assessment and also to achieve excellent management of the units.

- Implementing these guidelines in test units in Semester 2, 2010.

- The FSTE Firm Foundations in Science Project group included the following members:

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
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<tbody>
<tr>
<td>Tony Gendall</td>
<td>Botany</td>
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<tr>
<td>Tania Blanksby</td>
<td>Genetics + Faculty scholar</td>
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<tr>
<td>David Wilson</td>
<td>Chemistry</td>
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<tr>
<td>David Hoxley</td>
<td>Physics</td>
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<tr>
<td>Narelle Brack</td>
<td>Physics</td>
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<tr>
<td>Marcel Jackson</td>
<td>Mathematics</td>
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<tr>
<td>Mary Witten</td>
<td>Computer Science</td>
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<tr>
<td>Richard Tresider</td>
<td>Computer Science</td>
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<tr>
<td>Melanie Murphy</td>
<td>Psychology</td>
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<tr>
<td>Elizabeth Johnson</td>
<td>Associate Dean</td>
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<tr>
<td>Robyn Yucel</td>
<td>FSTE LAS</td>
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<td>Meg Rosse</td>
<td>FSTE LAS</td>
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<tr>
<td>Tony Gleeson</td>
<td>FSTE Educational Developer</td>
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<tr>
<td>Claire Brooks</td>
<td>Library</td>
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<tr>
<td>Graeme Oke</td>
<td>Library</td>
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<tr>
<td>Kris Valenta</td>
<td>Library</td>
</tr>
<tr>
<td>Michael Angove</td>
<td>Pharmacy</td>
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<tr>
<td>Marcus de Rijk</td>
<td>CTLC</td>
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**Environmental scan**

Recent literature on science-related information literacy programs, particularly those that are embedded in the curriculum, was reviewed in order to further develop the Science, Technology and Engineering information literacy program proposal.
Consultation
The Science, Technology and Engineering group met with the Health Sciences evaluation group to discuss and learn about issues associated with implementing the Health Sciences common first year information component, and possible implications for the proposed FSTE information literacy program.

Discussion paper
The Science, Technology and Engineering information literacy group prepared a discussion paper outlining a proposed plan for implementing the Information Literacy Strategy. The paper included a definition of information literacy skills and strategies to develop information literacy skills. The paper was presented to the following groups for feedback:

- Firm Foundations in Science Project
- First Year Biology Learning and Teaching Group

Feedback
Feedback from the FSTE Firm Foundations in Science project members and the First Year Biology Learning and Teaching Group on the discussion paper was incorporated into a draft proposal which was uploaded to the FSTE Firm Foundations in Science project Sharepoint site at: http://projectsr2007/PWA/FSTE%20Firm%20Foundations%20in%20Science/default.aspx

Feedback about the FSTE information literacy proposal from the Firm Foundations in Science Project and the First Year Biology Learning and Teaching Group has been positive. The FSTE information literacy proposal will be incorporated into the Firm Foundations in Science project final report for 2009.

Issues arising
Some of the issues identified include:

- Possible issues with implementing seven cornerstone units in the FSTE (see unit list below) rather than one common first year unit as was the case in the Health Sciences:
  - BIO1OF
  - CHE1GEN/CHE1BAS
  - MAT1DM
  - CSE1OOF
  - PHY1SCA
  - PSY1PYA
- FSTE is still negotiating the direction and content for each cornerstone unit.
- Details of the implementation of the Science, Technology and Engineering information literacy proposal cannot be confirmed until the level of commitment from the wider FSTE community is known.
- Evaluating/ Assessing IL skills.

Deliverables
- Science, Technology and Engineering information literacy Discussion Paper
- Draft FSTE information literacy program proposal
Program principles

Definition of skills required (what we want students to achieve)

Through a cornerstone subject, students should be able to:

- Know how information is organised
- Understand how to use and evaluate different information resources
- How to find information
- How to use information
- Understand the importance of investigating problems and making judgments on the basis of sound evidence, and understanding what they are doing and why – both at university and in their professional lives 11.
- Develop critical evaluation skills;
- Develop foundation research skills;

Program Proposal for implementing the Information Literacy Strategy in the FSTE first year curriculum

- Students would complete a diagnostic tool to assess entry level information literacy skills. This would make explicit the skills that are expected of students in terms of University graduate capabilities and give them feedback on their strengths and weaknesses.
- Students would work in small teams to create and edit wikis based on lecture topics in their unit.
  - Students would be encouraged to use a wide range of information resources to create their wikis. This process would also encourage the development of information literacy skills through peer learning and would also encourage teamwork (see Appendix 15).
  - The wiki has the added advantage in that it can be used as a revision tool for the entire class.
- An online library skills tutorial (http://latrobe.libguides.com/lso) would provide scaffolding/support for the development of information literacy skills. The diagnostic tool would direct students to specific modules in the online library skills tutorial e.g. if the student failed the diagnostic tool section on finding journal articles, they would be directed to this module in the online library skills tutorial.
- Workshops/ tutorials and online support will be available for students who fail the early diagnostic to help develop their information literacy skills.

Recommendations

1. Continue to collaborate with Faculty staff on the information literacy program proposal in order to implement the Information Literacy Strategy in the Faculty of Science, Technology and Engineering first year curriculum
2. Implement proposal to use wikis to facilitate and enrich information literacy teaching in first year Science cornerstone units.

STE first year information literacy program working group
Kristine Valenta (Coordinator), Graeme Oke (Coordinator).
Claire Brooks, Clayton Bolitho, Beverley Forsyth, Heather Hulett.

Carnegie Foundation for the Advancement of Teaching (2006) Opportunities for Scholarship, Presentation to Hong Kong University Grants Committee, Hong Kong 23-24 January 2006
Appendices – Information Literacy Strategy

Appendix 1: Workshop program

Familiar Paths or New Roads - Information Literacy Strategy Workshop

When:  Monday June 1\textsuperscript{st}, 2009  
10am – 1pm (lunch provided) 1pm – 3pm

Where:  Seminar Room, Bundoora Library

What:  Discuss what issues should be considered in developing an information literacy strategy for the Library’s contribution to the graduate capability of research/inquiry

<table>
<thead>
<tr>
<th>Time</th>
<th>Task</th>
<th>Detail</th>
<th>Note Takers</th>
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<tbody>
<tr>
<td>9:45</td>
<td>Arrive</td>
<td>Tea and coffee</td>
<td></td>
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</table>
| 10.00 | Introduction   | **Deciding the destination**  
Background and purpose of the workshop  
Define IL in the context of our current Policy and Framework - The Information Literacy policy defines where we are going and the Strategy outlines ‘how we are going to get there’  
What skills should a graduate who is capable in Research /Inquiry possess?  
How does/can the Library contribute to Research/Inquiry? | Fiona       |
|       | General discussion | What are we now?  
Overview of current approaches  
Strengths and challenges | Linda, Iris |
| 10.30 | Where are we now? | **You are here**  
Overview of current approaches  
Strengths and challenges  
Current drivers  
What at the external and internal drivers that impact on an IL strategy | Linda, Iris, Maureen |
| 11.15 | Morning tea    |                                                                        |             |
| 11.30 | Influences on our directions | **What do we pack?**  
Current drivers  
What at the external and internal drivers that impact on an IL strategy | Tracy, Fiona, Maureen |
| 12.00 | Issues         | **Which roads do we take?**  
- Embedded /add on / stand alone  
- Online v face2face  
- Hurdle / Credit bearing / optional  
- Different approaches for different levels | Iris, Maureen, Claire |
|       | Small group discussion | Mapping the journey  
Small group discussion on;  
Broad Objectives  
Possible Models of delivery  
Possible approaches to an IL Strategy | Linda, Iris, Claire |
| 1.00  | Lunch          |                                                                        |             |
| 1.30  | Mapping        | Creating an itinerary  
Discussion of where to next  
Timeline and Action Plan | Fiona, Linda |
| 2.30  | Planning       |                                                                        |             |

** note takers in blue
Appendix 2: Writing workshop program

Information Literacy Strategy Workshop

Monday July 13th, 2009:

10am – 3.30pm (lunch provided)

Seminar Room, GoTAFE Library, Shepparton

Objective:
To develop a discussion paper and draft IL strategy for distribution to the University community for comment.

Outcome of day:
• Agreed format for discussion paper, including headings and main points
• Agreed outline of IL strategy, including headings and main points

Agenda:

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<th>Time</th>
<th>Task</th>
<th>Detail</th>
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</thead>
<tbody>
<tr>
<td>9:45</td>
<td>Arrive</td>
<td>Tea and coffee</td>
</tr>
</tbody>
</table>
| 10.00 | Where we are up to | Summary of progress to date  
Reminder of drivers and timeline |
| 10.15 | Ideas           | Discussion of your vision                        |
| 11.15 | Morning tea     |                                                  |
| 11.30 | Draft of IL Strategy | Agree on main headings  
Work in pairs on dot points under each heading |
| 12.30 | Lunch           |                                                  |
| 1.00  | Draft of IL Strategy | Review dot points – what is missing?  
Agreed outline of IL strategy, including headings and main points |
| 2.00  | Discussion paper | Agreed format for discussion paper, including headings and main points |
| 3.00  | Where to next   | Timeline and Action Plan  
Consultation plan – including working with critical friends |

Dear Faculty Librarians,

Thank you for your recent feedback on the new Information Literacy Strategy. A revised version is now available for viewing on Sharepoint (IL Policy & Strategy Sept 19).


This version will be distributed to the wider university community for information and comment, via Faculty meetings and the various Library Committees between now and the end of October. There will also be promotion on the Library blog and newsletters, inviting feedback. Faculty Librarians are also encouraged to discuss the Strategy with their academic colleagues and provide any feedback to their Faculty and campus team leaders.

Some feedback on your feedback

The ILCC met to review the feedback and changes were made to try and address the following issues;

1. The suggested approach for undergraduates needs to be made clearer. What are the foundation skills which will be covered, when will that occur, what will be covered after first year?
   The Strategy now refers directly to the Framework (attributes 1 – 4) and that we are aiming to develop skills to a proficient level by the completion of the undergraduate year. This does not preclude students developing advanced skills, but the capstone module(s) will aim to measure capability at a proficient level, as defined in the Framework.
   The Committee felt it was too prescriptive to determine exact content and timing in the Strategy, but this may be something the Faculty teams wish to pursue within the broad structure suggested.

2. More detail wanted on the pre-experience/pre-test/diagnostic tool. Will it be tied to a post-test or Quiz? If so, who will those results go to?
   The Strategy now refers to a diagnostic tool, rather than a pre-experience or pre-test. A working group of Faculty Librarians will need to develop this but the desire would be to have a short, online quiz that students log in to and complete. The results are returned to them (for self-awareness) and broad results to the Library to inform program design. They do not complete a broad post-test but will complete a quiz either at the end of each online module completed or set by the Faculty in a cornerstone unit (such as Health Sciences have done).

3. Varying views on whether the modules should be generic or faculty specific. How do we balance relevance to a discipline and sustainability?
   The Strategy allows for both but the initial intention is to develop a small set of generic online tutorials in 2010 -which can be later customised if desired. The Reusable Objects Working Group is currently developing 4 tutorials based on the OILS tutorials. Faculty teams will meet to discuss what skills are common to all undergraduates.

4. Some concern about Postgraduate Essentials (as it currently stands) as the Library's preferred tool.
   The wording in the Strategy has been amended to ‘an online postgraduate support program’. The ILCC felt that it was still important to work with the wider university on a postgraduate program, rather than a stand-alone library product. This is particularly important as we often do not know of/have contact with commencing post-graduate students.

5. Co-curricula - term seems to cause confusion.
   The Strategy was amended to refer to ‘optional training and assistance’.

6. Voice of the document - are we offering a Library strategy or a University strategy?
   This was hotly debated. At this point in time, the Strategy advocates for a university-wide approach, but we must also accept that it is the Library contribution that we will have the most control over. The document is evolving and may be able to be more strongly worded if/when the University endorses this Strategy in its recommendations for Curriculum review.

Linda Sheridan and Fiona Salisbury
(on behalf of the Information Literacy Coordinating Committee)
Appendix 4: Feedback from committees

Library Committees

**Bundoora Library Liaison Committee** 8 October

Members were very supportive of the proposed Strategy and were interested in the detail of stratagems that would be used for undergraduates.

**Library Liaison Committee (Bendigo) – Tracy** 9 October

Committee were supportive and impressed with this initiative and keen to know when they could expect to see implementation across the board. They congratulated the Library on the involvement in the project.

**A-W Library Advisory Committee** 13 October

Members were very supportive of the proposed Strategy. The comment was made that it aligned closely with the Design for Learning approach. One member suggested promoting more widely the successes of the Health Sciences Common first year approach. This would help to convince academic staff of the value of allocating time for completion of IL modules within the first year curricula. Another member liked the idea of faculty librarians working more closely with academic staff to identify relevant resources for new courses.

**Library Committee** 21 October

The Strategy generated a lot of discussion with members generally positive about the approach. Questions were raised on:
- If the foundation modules are compulsory, how do we check that the students actually complete them? Will it be a compulsory hurdle requirement or assessed as part of their unit’s marks?
- If there are modules in the capstone units, how will achievement be certified? (completion and level of competence?)
- How will the strategy deal with advanced entry students?
- What part may e-portfolios play in the Strategy?

The point was made that there are 4 levels of postgraduates; research level, coursework level, technical graduate certificate (eg: VET teaching) and postgraduate courses which is distinctly different from the undergraduate training (eg: Dip Ed.). The members suggested considering the diversity of postgraduate students when fleshing out the postgraduate strategy.

**Other committees or forums:**

**AW Campus Academic Development Committee** 22 October

Members were very supportive of the proposed Strategy. Health Sciences staff confirmed that the approach to building IL skills in first year students was very successful and that a similar strategy is now being developed for 2nd years to build on these skills. Identifying a corner stone subject will be more challenging in the other faculties. members were very interested in the approach for postgraduate students. None had heard of Postgraduate Essentials but were interested to view it. They agreed that postgraduates enter with a vast range of skills and therefore supported the idea of a checklist. One member explained that she already uses a skills audit with postgraduate students, which may inform the Library’s checklist. Members liked that there was a visible link between undergraduates and postgraduates and that a student studying at a higher degree level will still be able to access the training in fundamental skills.
The meeting ended with a great deal of affirmation for the work that the Library does.

Cockatoo Club  28 October

Collection of comments / questions raised by the audience re embedding IL presentation

- Where getting skills at University? How better is it to embed at start (possible research area)?
- Alternative to embedding in a unit – 5 credit point subject, mandatory and online
- Lecturers/tutors are not teaching these skills
- It’s a timing issue; need to learn it before being assessed in another unit
- Gap – What the students need to know and don’t know
- Computer literacy is a gap
- IT and IL often go together
- Difficulty with technology is that it changes and younger people are ahead of us
- Skills will focus on understanding the concepts; standardised catalogues are not a reality
- Online skilling opportunities may be developed for PGs – evidence needed
- There are significant language issues, such as dealing with synonyms and more precise concepts
- An important skill in 1st year is how to construct a bibliography, students are not aware that there are other styles available.

Education Faculty Meeting (Bendigo)

Members were happy with proposal, and asked the following:

- Date of implementation
- How do we allow for pre-test differences?
- What if the students don’t pass the post-test?
- How will this affect the PhD students?

So while agreement in principle was given, and they were supportive, they were interested in the mechanics of how it would work.

Education School Meeting (Bendigo)

Again, general support for the project. One staff member with a PhD asked “What is Information Literacy?”. Marg felt that this comment highlighted the significance of this project, and the need for some structured embedding.
Appendix 5: Information Literacy Strategy summary
Information Literacy Strategy

Summary

Background

In 2008, the Library created its current Information Literacy Policy and Framework. The recently revised Policy explains why information literacy skills are crucial to independent learning and outlines the Library’s objectives and responsibilities in contributing to the development of information literate graduates and staff.

The accompanying Framework offers a guide to the sequential development of Information Literacy skills, matching desired attributes with specific competencies. The first four attributes align closely with competency in inquiry/research, which is one of the University’s graduate capabilities (Curriculum White Paper: Design for Learning, 2009).

The draft Information Literacy Strategy acknowledges that student development takes place in a whole of university context through activities that are integrated into the curriculum and those that supplement the curriculum. It complements the existing Policy and Framework by outlining an action plan for using the Information Literacy Framework as the basis for developing inquiry/research capabilities.

Principles

The draft Information Literacy Strategy is based on the following key principles:

- Inquiry/research skills are developed most effectively in students when that skill development is embedded in the curriculum and reflected in assessment tasks.
- Library staff work in partnership with other University staff involved in teaching and learning to develop programs which contribute to the achievement of student learning outcomes related to the graduate capability of inquiry/research.
- The approach outlined is systematic and sustainable, within the current Library staffing and funding levels, aiming for consistent outcomes across the University.
- The Strategy builds on the Library’s established reputation for customer service and responsive programs, while embracing new technologies and University initiatives.
- The Library will periodically review and evaluate the Strategy to reflect the changing University, educational and technological environment.
- Effectiveness of the Library’s information literacy programs will be evaluated in conjunction with teaching staff and will use meaningful, measureable and transparent key indicators of student learning as an integrated part of the normal curriculum assessment process. In addition, the Library will assess client satisfaction and/or usability of programs.
Key features

Strategy for undergraduates

- A diagnostic tool for all students that both assesses student entry-level skills and makes explicit skills that are expected in terms of University graduate capabilities.
- Set of online foundation skills tutorials embedded in the first year curricula structure. Ideally these will be incorporated in cornerstone units to acknowledge their importance and to emphasise a university-wide approach to building these skills. Assessment of the skills will check competence and progress against graduate capabilities.
- Further development of skills embedded in curriculum where appropriate and reinforced and supported by librarian assistance, in person and online, and discipline-specific online resources.
- Once capstone subjects are developed, undergraduates will complete a final assessment to measure and certify their acquisition of a set of discipline-specific information literacy skills.

Strategy for postgraduates

- A checklist rather than compulsory diagnostic tool - to identify possible gaps in existing knowledge and to provide links to resources to develop these skills.
- Depending on the gaps in existing knowledge, postgraduates may access any of the tutorials already created for undergraduate students and/or link to further information on building more advanced skills, embedded into a University endorsed postgraduate support program.
- Continuation of the successful discipline-specific programs and advice offered by Faculty Librarians.

Strategy for staff

- Improved communication and promotion of existing resources and services.
- Regular resource familiarisation and skills enhancement programs.
- Continued collaboration with Faculty Librarian to embed inquiry/research skills in the curricula.

Outcomes

If successfully implemented, the outcome will be;

- Graduates who can recognise the need for, and find credible information and then use that information to develop new skills and knowledge.
- A University that feels confident that all graduates have been given the opportunity to develop this capability.
- Librarians and academics who understand how each contributes to this process and work together to build capability in students.
- A comprehensive program for the Library that is sustainable and measurable, allowing Librarians time to keep abreast of new developments and respond accordingly.

To read the draft Information Literacy Strategy or the Discussion Paper which provides background and context, please visit www.lib.latrobe.edu.au/building-blocks/
Appendix 6: Information Literacy Discussion Paper
Purpose

This discussion paper provides the background and rationale for the development of the Information Literacy Strategy and revised Information Literacy Policy.

Background

The Review of Australian Higher Education Report (Bradley Review, 2009) has highlighted the need to focus on quality student experience and high-level outcomes from Universities. Responding to this, while pursuing a process of curriculum renewal, La Trobe University has listed 12 recommendations in the recently published *Curriculum Review and Renewal at La Trobe University: White Paper*. Recommendations include the development of cornerstone and capstone subjects and the identification of 6 core graduate capabilities. The Library specifically addresses the graduate capability of inquiry/research in this Information Literacy Strategy, proposing a systematic, University-wide approach to its development.

The need for ensuring a good grounding in inquiry/research capability is likely to increase with the government’s push for increased participation in higher education, particularly if a greater proportion of commencing students have low levels of information literacy. Any strategy to address graduate capability in inquiry/research will need to include methods for assessing entry and exit level skills to ensure that the approaches adopted meet the changing needs of students.

The process of review

The process to review the existing Information Literacy Policy and draft an Information Literacy Strategy began with an examination of relevant and recent literature. Small group discussions were held with Library Staff on what was successful and limiting in our current approaches, followed by a workshop of representatives from all campuses to discuss the central issues. Focus groups with academic staff at Bundoora and Albury-Wodonga were also conducted to gain further feedback on strategies to develop inquiry/research skills in a changing educational environment.

Current practices

The Library’s Information Literacy program currently includes face-to-face tutorials, lectures, workshops and online tutorials in generic or faculty specific design. Individual assistance is provided face-to-face at Information/Research desks in the library and online via Chat, “Ask a librarian” or email.

Its strength lies in this diverse range of approaches and is grounded in the willingness of librarians to undertake the teaching of information literacy skills at any time and in whichever format is requested. However the current program is often not intentionally designed as a cohesive part of the curricula structure and does not give all student equal opportunities to develop information literacy skills.

The success of the current program is particularly limited when:
- information literacy is perceived as an optional add-on rather than a foundation skill
- effective collaboration is reliant on individual academic staff inviting librarians to participate in skill development
- Faculty Librarians, particularly at Bundoora where student numbers are large, cannot meet the rising demand for face to face classes.
- Students become disengaged by repeating similar skills instruction in different units or being asked to tackle advanced skills before foundation skills are mastered.
- Ad hoc development occurs rather than coherent development over the course of an undergraduate program.
- Impact of the Library’s intervention cannot be measured to inform future program planning and resource allocation.

In 2009 a new approach was implemented in the Health Sciences first year curriculum which has been a way to field-test solutions to existing limitations. The evaluation of the approach in Health Sciences has provided evidence to inform the Information Literacy Strategy.

The Information Literacy strategy seeks to build on existing strengths, particularly the positive partnerships between academics and library staff, but to do so in a more scalable, sustainable and systematic way. The recommended strategy would be implemented as a whole of university activity, strongly based in discipline specific, embedded academic tasks and supported by informal and co-curricula activities.

**Context and rationale for the Strategy**

In 2008, the Library created its current Information Literacy Policy and Framework. The recently revised Policy explains why information literacy skills are crucial to independent learning and outlines the Library’s objectives and responsibilities in contributing to the development of information literate graduates and staff. The library contribution to this endeavour sits within the broad domains of Student Experience; Curriculum design and evaluation; and Staff development.

The accompanying Framework offers a guide to the sequential development of IL skills, matching desired attributes with specific competencies. The first four attributes align closely with competency in inquiry/research, which is one of the University’s graduate capabilities (Curriculum White Paper: Design for Learning, 2009).

The Information Literacy Strategy acknowledges that student development takes place in a whole of university context through activities that are integrated into the curriculum and those that supplement the curriculum. It complements the existing Policy and Framework by outlining an action plan for using the Information Literacy Framework as the basis for developing a coordinated university-wide program for developing inquiry/research capabilities.

The draft Strategy is designed to:
- Support embedded research/inquiry skills in a constructively aligned curriculum
- Provide flexible approaches to teaching and learning including online, in-person, blended, at point of need
- Reflect sound pedagogical practice and evidence based teaching and learning methods

The Information Literacy Strategy is based on the following key principles:

1. Inquiry/research skills are developed most effectively in students when that skill development is embedded in the curriculum and reflected in assessment tasks
2. Library staff work in partnership with other University staff involved in teaching and learning to develop programs which contribute to the achievement of student learning outcomes related to the graduate capability of inquiry/research.
3. The approach outlined is systematic and sustainable, within the current Library staffing and funding levels, aiming for consistent outcomes across the University.

4. The Strategy builds on the Library's established reputation for customer service and responsive programs, while embracing new technologies and University initiatives.

5. The Library will periodically review and evaluate the Strategy to reflect the changing University, educational and technological environment.

6. Effectiveness of the Library’s information literacy programs will be evaluated in conjunction with teaching staff and will use meaningful, measureable and transparent key indicators of student learning as an integrated part of the normal curriculum assessment process. In addition, the Library will assess client satisfaction and/or usability of programs.

Strategy for Undergraduates

Initial assessment of information literacy (inquiry/research skills)

The move towards a more Enquiry Based Learning (EBL) approach, together with the explosion of information sources and technologies means inquiry/research skills for students are changing rapidly. As part of the Health Sciences 1st year program in 2009 a pre-experience survey to assess students’ entry level skills and knowledge of the scholarly information seeking process was conducted. The survey has provided compelling evidence that the majority of entry-level students do not have the basic foundation skills required for first year academic learning tasks.

“Fewer than 10% of incoming first year Health Sciences students could correctly answer more than 5 out of 10 information literacy questions”

Preliminary evaluation of Health Sciences Pre-test, 2009

The Information Literacy Strategy proposes the introduction of a diagnostic tool completed by all commencing students that both assesses student entry-level skills and make explicit skills that are expected. This information will inform intentional design and review of information literacy programs.

Compulsory foundation skills instruction (Inquiry /research skills)

The Information Literacy Strategy recommends a compulsory introduction to scholarly research and library services so that all students can acquire foundation skills at the start of their course of study. One way to ensure that all commencing students have the opportunity to access this information, is to make it available in a supported, online environment that students can return to as needed, enabling self directed study.

Ideally, students would complete a quiz or other form of assessment as a hurdle requirement to demonstrate competence in these foundation skills. Foundation skills for each faculty will be determined in collaboration with faculty staff, guided by the Library’s Information Literacy Framework. This proposal sends a clear message to students about the nature of their role as developing scholars ready and able to undertake research activities and pursue inquiries from first year.

Integration of inquiry/research graduate capabilities into curricula

The Information Literacy Strategy recommends that Library staff should be included in the early design phase of the curriculum. This was the model adopted in the development of the Health Sciences first year curriculum. Preliminary results from the Health Sciences evaluation show that there was a marked increase in correct answers related to scholarly information seeking after students had the opportunity to work through the Library created modules. Students were asked to use the online information literacy modules, complete a quiz, access library support and reflect on the research process, all within the context of their
enquiries which were designed to facilitate the acquisition of some basic information literacy skills. From these results it appears that embedding information literacy in the curricula structure, particularly in cornerstone subjects, improves acquisition of library research skills across the whole cohort.

“Recommendation 4: That all programs develop and offer ‘cornerstone’ subjects – or provide the equivalent – in the first semester of enrolment, which will provide all students with a strong foundation for academic success…”

Curriculum Review and Renewal at La Trobe University: White paper

To provide students with an opportunity to ‘review, reflect on and reinforce the key knowledge and skills they have learned” (White Paper, p.11), the Strategy also proposes that Librarians assist in the design and delivery of suitable curricula for inclusion in capstone units to test discipline-specific skills in inquiry/research.

Strategy for Postgraduates

Postgraduate students can be a more difficult group to access as they are often not required to attend campus regularly and are encouraged to be independent in their studies. They also enter with a diverse range of skills and may be completing coursework or independent research. The Information Literacy Strategy seeks to improve the opportunities for postgraduate students to build on their existing skills and to know how and where to access further help when needed.

Initial self-assessment of information literacy (inquiry/research skills)

The Information Literacy Strategy proposes the development of an online checklist which postgraduate students can access to identify whether there are any gaps in their present knowledge base and link to appropriate tutorials or support to develop the desired skills.

Cohesive set of information and links to skills development

To provide all postgraduate students with access to essential information about services and skills needed for advanced levels of research, the Library will work collaboratively with academics and the Graduate and Research Office to develop an online postgraduate support program, such as Postgraduate Essentials. This will allow students who may not have regular on-campus contact to access relevant information and links to further support. http://www.latrobe.edu.au/research-pg-essentials/documents/pghome.html

Customised research advice

Because of the importance of facilitating high quality research and learning outcomes in postgraduate students, the Library suggests augmenting the online tutorials with the opportunity for individual support via liaison with the relevant Faculty Librarian. The Library has recently changed the staffing structure to allow more time for professional librarians to spend on research support and appointed a series of team leaders to work closely with faculty to understand their teaching and research needs. Faculty Librarians will continue to offer tailored programs to meet the needs of discipline based groups, in collaboration with academic staff, and to offer research consultations with individual students.

The Library will also develop a program of research skill seminars offered across the Library. These will be available to postgraduate students on a voluntary basis.

Strategy for University Staff

The strategy for staff focuses on building on the partnerships already established, particularly with regard to collaborative design of curriculum, and continuing to keep staff informed of appropriate resources and services to strengthen their teaching and research.
To ensure that all staff have knowledge of the range of library resources and services available, all commencing staff will receive a ‘Welcome to the Library’ pack. This pack includes a brochure on “Library services to new staff” and initial contact from the relevant Faculty Librarian. This will be supplemented by offering sessions on resource awareness and advanced research skills to interested staff, as well as designing and conducting a session for new academic staff as part of the ‘Introduction to University teaching’ program.

The Information Literacy Strategy also recommends developing a toolkit for use by academic staff in embedding skills of inquiry/research into the curriculum. This will consist of case studies of good practice at La Trobe, links to various tools that can be used by academics and ideas of possible inquiry/research teaching and learning activities.

**Concurrent and future initiatives**

The Library could enhance its role in building capability in inquiry/research by a greater participation in the following areas of academic life.

**Undergraduate students**

- E-portfolios: To encourage a reflective approach to building information literacy skills the Library could support and contribute to University e-portfolio initiatives. For example the development of an e-portfolio template related to information literacy skills or an information literacy self-assessment checklist would help give students a more explicit awareness of their growing capabilities or help them identify areas for further development.

- Closer liaison with Language and Academic Services: In order to provide a multi-faceted approach to building academic skills the Library aims to work collaboratively with Language and Academic Services and build on existing relationships.

- Transition or pathway programs: In conjunction with other areas of the University the Library could explore and collaborate on transition or pathway programs for students who do not start their course at the start of first year.

**Postgraduate students**

- The library would like to explore the development of a ‘research advisor’ role to offer a more proactive service to interested students. Research based Masters and PhD students would be invited to register their research topic with a Faculty Librarian in the early stage of their study so that the Librarian could offer advice on relevant resources and offer support at key points in the research process.

- The Library will explore new technologies, such as Elluminate, as an alternative platform for providing one on one or small group tuition and support.

**University Staff**

- Involvement in tutor training: As the curriculum in many Faculties moves towards Enquiry Based Learning approaches, tutors need to be able to direct students to authoritative sources, and also to be able to guide them in evaluating information sources. In collaboration with other areas the Library could explore how to contribute to tutor training so that tutors have a greater knowledge of relevant sources and can guide students appropriately.

**Library Information Literacy Coordinating Committee**

Linda Sheridan (Chair), Claire Brooks, Iris Perkins, Tracy Robertson, Fiona Salisbury, Maureen Speed.
Appendix 7: Information Literacy Policy, Framework and Strategy
### Purpose

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### Scope

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### What is information literacy?

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### Objectives and Responsibilities of Library

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#### 2: Information Literacy Framework

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Purpose

At La Trobe University, the development of skills in research excellence is undertaken as a partnership between academic staff, librarians and other teaching and learning staff. The purpose of this policy is to outline the Library’s objectives and responsibilities as a key collaborator in promoting and supporting the development of graduate capabilities, in particular capabilities related to inquiry/research.

Scope

The policy encompasses undergraduate and postgraduate students and staff of the University. It is aligned with the La Trobe University Strategic Plan, the University’s plan for curriculum review and renewal Design for Learning (White Paper), the University Library’s Strategic Plan and the stated values which guide research, scholarship, teaching and organizational practices of the University.

What is information literacy?

The skills of inquiry/research are aligned with what is commonly referred to in the literature as ‘information literacy’. If a person is information literate they have “learned how to learn, they know how knowledge is organized, how to find information and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning.” 1

The Australian and New Zealand Information Literacy Framework provides the principles and standards upon which this policy is based. It states that information literate people:

- Recognise a need for information, determine the extent of information needed, and access information efficiently
- Critically evaluate information and its sources
- Classify, store, manipulate and redraft information collected or generated
- Incorporate selected information into their knowledge base, and use information effectively to learn, create new knowledge, solve problems and make decisions
- Understand economic, legal, social, political and cultural issues in the use of information and access and use information ethically and legally
- Use information and knowledge for participative citizenship and social responsibility
- Experience information literacy as part of independent learning and lifelong learning

Objectives and Responsibilities of Library

The primary objective of the Library is to make a major contribution to the development of information literate graduates.

In order to achieve this objective the University Library will contribute within the following areas:

Curriculum Design and Evaluation

- Promote the systematic and systemic integration of information literacy instruction into the University curricula structure through implementation of the Framework and Strategy
- Contribute to new and revised curriculum design particularly in cornerstone and capstone subjects
- Collaborate with university colleagues to provide course-related and course integrated inquiry/research skills instruction in a range of delivery modes

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Student Experience
- Provide opportunities for self-directed learning, participation in generic programs and use of flexible resources to support and reinforce development of inquiry/research skills regardless of mode of study
- Coordinate information literacy related services in a student-centred way

Staff Development
- Facilitate appropriate professional development opportunities for library staff to inform their teaching, learning and research in this area, including professional mentoring
- Provide appropriate resourcing and infrastructure to support Library staff in implementation of the Framework, including appropriate ICT support
- Provide all university staff with information about services and resources of the Library

Strategy
The Strategy (Appendix 1) outlines the Library’s plan for contributing to the development of information literate graduates and, in doing so, offers leadership for a university wide approach to developing graduate capability in inquiry/research.

The Strategy is based on the following key principles:
- Inquiry/research skills are developed most effectively in students when skill development is embedded in the curriculum and reflected in assessment tasks
- Library staff work in partnership with University staff involved in teaching and learning to develop programs which contribute to the achievement of student learning outcomes related to the graduate capability of inquiry/research
- The approach outlined is systematic and sustainable, within current staffing and funding levels, aiming for consistent outcomes across the University
- The Strategy builds on the Library’s established reputation for customer service and responsive programs, while embracing new technologies and University initiatives
- The Library will periodically review and evaluate the strategy to reflect the changing University, educational and technological environment
- Effectiveness of the Library’s information literacy programs will be evaluated in conjunction with teaching staff and will use meaningful, measureable and transparent key indicators of student learning as an integrated part of the normal curriculum assessment process. In addition, the Library will assess client satisfaction and/or usability of programs

The Strategy suggests a range of approaches for four user groups; undergraduates, postgraduates, staff and other distinct groups, both internal and external to the University.

Framework
Students are best able to acquire information literacy skills if skills are introduced incrementally throughout their course, in the context of their discipline and through a range of learning experiences. The Australian and New Zealand Information Literacy Framework (ANZIL 2004, p6) explains that:

Information literacy requires sustained development throughout all levels of formal education, primary, secondary and tertiary. In particular, as students progress through their undergraduate years and graduate programs, they need to have repeated opportunities for seeking, evaluating, managing and applying information gathered from multiple sources and obtained from discipline specific research methods. Achieving information literacy requires an understanding that such development is not extraneous to the curriculum but is woven into its content, structure and sequence. Furthermore, information literacy “cannot be the outcome of any one subject. It is the cumulative experience from a range of subjects and learning experiences which creates the information literate person.”
Based on existing frameworks\(^2\), the Library has developed an Information Literacy Framework (Appendix 2) to guide incremental progression of information literacy skill development. It outlines learning outcomes at three levels: foundation, proficient, and advanced.

By articulating the learning outcomes at each level, the aim of the Framework is to assist academics and librarians to develop information literacy programs within the context of each course. The learning outcomes can be used as a basis for mapping and evaluating information literacy skills as students progress through their studies. The Library is involved in all attributes listed in the Framework but with particular emphasis on attributes 1 – 4, which align most closely with capability in inquiry/research.

Implementation of the Framework will be a collaborative activity. Librarians will develop information literacy programs in cooperation with academic staff and other University colleagues. The Framework will be implemented across all campuses and will evolve as it is tried and tested in practice.

**Supporting documentation**

Australian and New Zealand Information Literacy Framework 2nd ed. 2004

La Trobe University Vision and Strategic Plan 2008-2012
http://www.latrobe.edu.au/about/vision

Learning and Teaching at La Trobe University
http://www.latrobe.edu.au/teaching/

La Trobe University Library Strategic Plan 2009 – 2012

University of Tasmania Information Literacy Policy and Framework

\(^2\) Including that produced by the University of Tasmania Library, on which this framework is based.
Appendices

1. Information Literacy Strategy

This Strategy outlines a university-wide, collaborative approach to the development of skills in inquiry/research. A person with this capability

- Recognises the need for information and determines the nature and extent of the information needed
- Finds needed information effectively and efficiently
- Critically evaluates information and the information-seeking process
- Manages information collected and generated

The Strategy builds on existing strengths and introduces new approaches to provide a more systematic and sustainable program for students and staff.

Students

The strategy for students aims to identify the fundamental skills essential for successful academic research and to ensure that all students have the opportunity, early in their course, to develop these skills.

All commencing students will complete a diagnostic tool to determine their current level of competency. Students will then be directed to complete a set of online modules designed to develop specific skills, followed by assessment to gauge their level of competency.

Inquiry/research skills will be further developed throughout the undergraduate and postgraduate years in a discipline specific way, in collaboration with academic and other learning skills staff. This will be supplemented by optional training and support programs which students may access as needed.

Undergraduates

The strategy for undergraduates is designed to provide all students with access to a strong foundation on which they can build the inquiry/research capabilities that are essential for academic success. It encompasses the following approaches to enable students to develop these skills sequentially through their undergraduate degree:

- Foundation skills instruction embedded in the first year curricula structure
- Inquiry/research skills instruction integrated in the discipline-based curriculum where relevant
- Voluntary instruction to support and reinforce skills acquisition through a range of library services

To measure the ongoing relevance and impact of the undergraduate strategy, student entry-level skills will be mapped and development of inquiry/research capabilities will be assessed to facilitate future planning and program review.
### Foundation level

<table>
<thead>
<tr>
<th>Aim:</th>
<th>Action:</th>
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<tbody>
<tr>
<td>Establish entry-level skills of incoming first year students</td>
<td>• Develop a diagnostic tool for all students that both assesses student entry-level skills and makes explicit skills that are expected</td>
</tr>
</tbody>
</table>
| Equip all **first year/beginning** students with foundation inquiry/research skills | Foundation skills program to be integrated into appropriate cornerstone units in each Faculty  
• Use Information Literacy Framework to identify foundation skills  
• Develop online modules to deliver foundation inquiry/research skills instruction appropriate to each Faculty  
• Incorporate assessment of skill development as compulsory requirement in cornerstone units |

### Proficient level

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<th>Aim:</th>
<th>Action:</th>
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| Build on foundation skills to develop a high level of proficiency as appropriate within each discipline | Support and reinforce inquiry/research skills acquisition in middle undergraduate years through:  
  o information literacy tasks, assessment and instruction integrated within the curriculum (designed by Faculty Librarians in collaboration with academics)  
  o face-to-face learning opportunities either generic or discipline specific as relevant to student needs at each campus  
  o individual support via library research help/information desks and virtual help desks  
  o self-directed learning opportunities using reusable online learning objects delivered via the library webpage, LMS etc.  
  o formal peer support programs |
| Ensure all graduates have achieved at least a proficient level of inquiry/research skills | Proficient skills program to be integrated into appropriate capstone units in each Faculty  
• Use Information Literacy Framework to identify more advanced skills appropriate to graduates in each Faculty  
• Develop online modules to deliver advanced inquiry/research skills instruction appropriate to each Faculty  
• Incorporate assessment of skill development as compulsory requirement in capstone units  
• Develop a diagnostic tool for all students that both tests their skill level and can be used to certify that they have reached the expected level of inquiry/research graduate capability for their Faculty.
Postgraduates

The strategy for postgraduates acknowledges that students enter higher degree study with a diverse range of existing skills in inquiry/research but will be required to master advanced skills to complete study at this level.

The strategy offers support for independent learning via a range of online modules, as well as utilising the skills of Faculty Librarians in a customised discipline-specific way. It includes:

- Inquiry/research skills instruction integrated into a University-wide postgraduate support program, such as Postgraduates Essentials, with online modules to be accessed as needed
- Discipline specific inquiry/research skills instruction integrated in the curriculum where relevant
- Optional training and assistance to support and reinforce skills acquisition through a range of library services, including individual research consultation

Students will have the opportunity to assess their own inquiry/research skills using a checklist and identify areas for further development.

Foundation level

<table>
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<tr>
<th>Aim:</th>
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<tbody>
<tr>
<td>Establish entry-level skills of incoming postgraduate students</td>
<td>• In collaboration with academic and teaching staff, develop an online checklist for self-assessment of core skills for advanced research, to assist students in identifying areas for further development.</td>
</tr>
<tr>
<td>Provide opportunity to review and consolidate foundation skills</td>
<td>• Develop online modules to deliver foundation inquiry/research skills instruction, which can be accessed on a voluntary basis.</td>
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Proficient - Advanced level

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<tr>
<th>Aim:</th>
<th>Action:</th>
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<tr>
<td>Provide all commencing postgraduate students with essential information about services and skills needed for advanced levels of research</td>
<td>• Work collaboratively with academics and the Graduate and Research Office to develop a postgraduate support program (e.g. Postgraduate Essential) as a platform for further support from Faculty Librarians.</td>
</tr>
<tr>
<td>Build on existing skills to develop a high level of proficiency as appropriate within each discipline.</td>
<td>• Faculty Librarians continue to offer tailored programs to meet the needs of discipline based groups, in collaboration with academic staff, including orientation sessions designed specifically for research students.</td>
</tr>
</tbody>
</table>
| Provide opportunities for students to undertake voluntary activities that will support and reinforce inquiry/research skills acquisition. | • Continue to offer research consultations between individual students and Faculty Librarians  
  • Support students on an individual or small group basis via library research help/information desks and virtual help desks  
  • Develop a program of research skill seminars to be offered across the Library, using a range of appropriate delivery methods. |
### Staff

The strategy acknowledges that staff are already skilled in inquiry/research but may appreciate the opportunity to receive updates on new resources and methods of locating and managing information. The strategy also aims to capitalise on opportunities for academics and librarians to collaborate on curriculum design to support inquiry/research skill development in their students (see Undergraduates).

<table>
<thead>
<tr>
<th>Aim: Provide all university staff with essential information about services and resources of the Library</th>
<th>Action:</th>
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<tbody>
<tr>
<td>• Provide all new staff with a ‘Welcome to the Library’ pack, which includes a summary of relevant services available and a link to the relevant Faculty Librarian. Early contact with the Faculty Librarian will seek to register the teaching and research interests of the staff member to assist the Library in providing responsive services and collection development</td>
<td></td>
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<tr>
<td>• Work with University staff to provide input to the ‘Introduction to University teaching’ program offered by the University</td>
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<tr>
<td>• Continue and enhance promotion of resources and services, including ‘show and tell’ sessions with Faculty Librarians</td>
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<table>
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<tr>
<th>Provide regular opportunities for university staff to receive training and assistance to support their teaching and research</th>
<th>Action:</th>
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<tbody>
<tr>
<td>• Develop a program of research skill seminars to be offered across the Library, using a range of appropriate delivery methods</td>
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<tr>
<td>• Continue to offer research consultations between individual staff and Faculty Librarians</td>
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<tr>
<td>• Work on curriculum design with academic staff and Faculty committees to integrate and align information literacy tasks, assessment and instruction within the curriculum</td>
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</table>

### Other distinct groups

Many groups exist within the University who may require additional support in building capability in inquiry/research.

There are also external groups who visit the Library wishing to understand more about research, resources and services.

The strategy to meet the needs of these groups focuses on flexibility and is supported by Faculty Librarians with specific responsibilities for these groups working in partnership with relevant staff across the University.

<table>
<thead>
<tr>
<th>Aim: Provide appropriate support for internal groups within the university community (e.g. international students etc.) to master inquiry/research skills</th>
<th>Action:</th>
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<tbody>
<tr>
<td>• In addition to the services offered to all students and working closely with relevant University staff, develop learning opportunities, both online and face to face, tailored to the specific needs of identified internal groups</td>
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</table>

<table>
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<tr>
<th>Provide opportunities for community groups, including alumni, to access some of the resources and research assistance which a high quality university library can offer</th>
<th>Action:</th>
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<tbody>
<tr>
<td>• Identify target audiences</td>
<td></td>
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<tr>
<td>• Liaise with key stakeholders to identify potential need and determine a sustainable level of support from the Library</td>
<td></td>
</tr>
<tr>
<td>• Develop learning opportunities, both online and face to face, tailored to the specific needs of identified external groups</td>
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</table>
## 2: Information Literacy Framework

<table>
<thead>
<tr>
<th>Information Literacy Attributes</th>
<th>Foundation</th>
<th>Proficient</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ANZIL (2004) Standards</strong></td>
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</tr>
<tr>
<td>The information literate person…</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1. Recognises the need for information and determines the nature and extent of the information needed</td>
<td>• Engages in closed or open inquiry with predetermined question/issue and criteria.</td>
<td>• Engages in open inquiry, within structured guidelines.</td>
<td>• Engages in open inquiry within self-determined guidelines.</td>
</tr>
<tr>
<td></td>
<td>• Distinguishes between different information types and is able to interpret a reading list.</td>
<td>• Asks research questions that are specific and answerable and guide the inquiry.</td>
<td>• Asks research questions based on experience, expertise and/or literature reviews.</td>
</tr>
<tr>
<td></td>
<td>• Understands the different sources of information available.</td>
<td>• Determines nature and extent of information needed.</td>
<td>• Determines the nature and extent of information needed to address the open inquiry.</td>
</tr>
<tr>
<td></td>
<td>• Identifies key search concepts.</td>
<td>• Asks research questions based on experience, expertise and/or literature reviews.</td>
<td>• Determines the nature and extent of information needed to address the open inquiry.</td>
</tr>
<tr>
<td></td>
<td>• Devises relevant search strategies.</td>
<td>• Determines nature and extent of information needed.</td>
<td>• Determines the nature and extent of information needed to address the open inquiry.</td>
</tr>
<tr>
<td>2. Finds needed information effectively and efficiently</td>
<td>• Becomes familiar with the Library’s basic facilities and processes.</td>
<td>• Is able to undertake a complex search strategy.</td>
<td>• Applies multiple strategy searches.</td>
</tr>
<tr>
<td></td>
<td>• undertakes a basic search strategy.</td>
<td>• Independently identifies sources appropriate to discipline.</td>
<td>• Utilises multiple source types, including primary information when possible.</td>
</tr>
<tr>
<td></td>
<td>• Finds relevant information from prescribed sources.</td>
<td>• Utilises multiple source types, including primary information when possible.</td>
<td>• Locates found items at other institutions as appropriate.</td>
</tr>
<tr>
<td></td>
<td>• Locates found items in the University Library system – online and print.</td>
<td>• Locates found items at other institutions as appropriate.</td>
<td>• Locates found items at other institutions as appropriate.</td>
</tr>
<tr>
<td>3. Critically evaluates information and the information-seeking process</td>
<td>• Assesses the quality, quantity and relevance of the search results, according to set criteria.</td>
<td>• Defines criteria for evaluating information from a critical perspective.</td>
<td>• Evaluates sources from multiple critical perspectives.</td>
</tr>
<tr>
<td></td>
<td>• Modifies search strategies as necessary or considers if other sources should be used.</td>
<td>• Analyses structure, logic, scope perspective and relevance of sources and search strategies.</td>
<td>• Analyses structure, logic, scope perspective and relevance of sources and search strategies.</td>
</tr>
<tr>
<td>4. Manages information collected and generated</td>
<td>• Records all citation information, using a given bibliographic style</td>
<td>• Understands the elements of a citation and can format it in an appropriate bibliographic style.</td>
<td>• Utilises a bibliographic management system to organise retrieval and access of multiple references (e.g., Endnote).</td>
</tr>
<tr>
<td></td>
<td>• Stores information for future reference and retrieval.</td>
<td>• Recognises need to systematically store and evaluate information for future reference and retrieval</td>
<td>• Utilises a bibliographic management system to organise retrieval and access of multiple references (e.g., Endnote).</td>
</tr>
<tr>
<td>5. Applies prior and new information to construct new concepts or create new understandings</td>
<td>• Applies understanding and synthesis to the information gathered.</td>
<td>• Compares and integrates new understandings with prior knowledge.</td>
<td>• Synthesises information to develop new hypotheses, models or research agenda.</td>
</tr>
<tr>
<td></td>
<td>• Communicates new understandings effectively.</td>
<td>• Uses appropriate media and forms of presentation for audience/information.</td>
<td>• Synthesises information to develop new hypotheses, models or research agenda.</td>
</tr>
<tr>
<td>6. Uses information with understanding and acknowledges cultural, ethical, economic, legal, and social issues in the use of information</td>
<td>• Avoids plagiarism by acknowledging sources used.</td>
<td>• Identifies the value and belief systems underlying the information.</td>
<td>• Actively seeks out a range of perspectives, critiquing the underlying belief and value systems.</td>
</tr>
<tr>
<td></td>
<td>• Evaluates balance/fairness of the information.</td>
<td>• Conforms with legal and ethical requirements related to accessing, using and storing information.</td>
<td>• Actively seeks out a range of perspectives, critiquing the underlying belief and value systems.</td>
</tr>
</tbody>
</table>

*Based on the Information Literacy Framework, University of Tasmania, 2006*
Glossary of terms used in this Framework

Basic search strategy – involves identification of main keywords in a topic and combining the keywords with a Boolean operator.

Complex search strategy – involves identification of main keywords in a topic and possible alternatives to those terms, and then combining the terms using Boolean operators and/or proximity operators to locate relevant references.

Information Literacy – the capacity of individuals to realize when they need information, be able to find, access and use that information as required.

Information Literacy Skills – the set of abilities enabling individuals to become information literate.

Information Literacy Education – teaching the skills required to assist individuals to become information literate as specified in the information literacy policy.
Appendices – Action Research: Health Sciences evaluation

Appendix 8 – Pre experience survey report
Library pre-experience survey

Faculty of Health Sciences:
first year student cohort 2009

3 December 2009

Eva Fisch
Sharon Karasmanis
Fiona Salisbury
Jenny Corbin

On behalf of the Library Health Sciences Evaluation Working Group
Jenny Corbin (Co-ordinator) Eva Fisch Sharon Karasmanis Fiona Salisbury Claire Brooks Chris Wanklyn
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9. Appendix 1 – Survey document
1. Introduction

The Library has been involved with the redevelopment of the Faculty of Health Sciences’ Common First Year since the idea was first proposed, working collaboratively with academic staff and administrators to shape and develop library collections and services to match the needs of a large student cohort under the enquiry based learning model.

In 2009, a small Library working group began planning how to evaluate the development of Library services in response to the needs of the new pedagogical model. The group developed an evaluation plan with a number of key elements as follows:

- assessing the impact on Library staff, collections, space and services cross campus
- assessing the usability and measuring the effectiveness of the Library's Health Sciences Information Literacy Modules, and their role in creating learners that are empowered to use evidence routinely and effectively to inform their learning
- gathering data on key successes and areas for improvement from the main stakeholder groups

One of the projects the group has been working on involved a pre-test of first year Health Sciences students to assess their entry level skills and knowledge of the scholarly information seeking process. This ‘pre test’ conducted in March 2009, will be complemented by a ‘post test’ in September 2009 to measure the degree to which students are developing the characteristics and skills of mature information seekers. These results will be of interest to the wider academic community at La Trobe as a way of mapping the development of various graduate capabilities. The data will also contribute to the wider international discussion of information literacy for lifelong learning.

The project is also part of a larger La Trobe University Library project to examine the degree to which formal information literacy programs can improve learning outcomes of students. The project complies with the relevant ethics guidelines: La Trobe University, Human Research Ethics Guidelines, Staff Survey Guidelines & Student Survey Guidelines’, and falls into the ‘negligible risk’ category.

2. Literature

The literature reviewed for this project was directly related to survey design and implementation. Although various survey designs were considered, the Mittermeyer (2003) design was the best fit for the current environment and student cohort. It had been internationally benchmarked and validated and, as a multidisciplinary tool, could be applied across other disciplines if required. Further support to this design was the use of this instrument by another Australian university (Bernath and Jenkin, 2006). These resources, in addition to local experience and advice, informed the development of the questionnaire.

There was also the need to assess exact entry level skills in semester one and this distribution design (in consultation with Health Sciences Faculty) enabled the data collection to take place in the first week of semester. The Mittermeyer survey (2003) also used a print model, although posted to the student’s home address prior to commencement of the academic year.

3. Methodology

A print survey of twenty questions (Appendix 1) was handed out during class time (in tutorial groups) by librarians and tutors, and collected at the end of the class. The survey was run during the first three days of semester one 2-4 March 2009 at all five campuses of the University. 1029 forms were collected, with 1000 usable, resulting in a response rate of over 60%. (1651 students were enrolled in first year). The surveys did not collect information which would allow the participants to be individually identified. The data was coded and analysed using SPSS, by an experienced statistician and past staff member of La Trobe University.

The results are presented with the survey question, theme, purpose of the question, results and interpretation (which includes a table depicting all responses). Following analysis of questions 10-20 (the ‘knowledge’ questions), there is a La Trobe and Mittermeyer relevant results comparison.

4. Survey results

4.1 Demographic data: age, prior education, health sciences discipline, campus

Q1. Age group: (Circle only one answer)

<table>
<thead>
<tr>
<th>Group</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>a 16-18</td>
<td>502</td>
<td>50.2</td>
</tr>
<tr>
<td>b 19-21</td>
<td>341</td>
<td>34.1</td>
</tr>
<tr>
<td>22-30</td>
<td>109</td>
<td>10.9</td>
</tr>
<tr>
<td>31-40</td>
<td>26</td>
<td>2.6</td>
</tr>
<tr>
<td>40+</td>
<td>22</td>
<td>2.2</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>

When the data is regrouped into the categories of 21 and under and 22 and over, and then cross tabulated by campus, the groups with the greatest 22 years and over first year proportions are Albury Wodonga and Shepparton, with Bundoora having the highest proportion of school leavers.

Responses by Campus: 21 and under age group versus the 22 and over age group

<table>
<thead>
<tr>
<th>Campus</th>
<th>Percent 21 and under</th>
<th>Percent 22 and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albury/Wodonga</td>
<td>62.3</td>
<td>37.7</td>
</tr>
<tr>
<td>Bendigo</td>
<td>84.7</td>
<td>15.3</td>
</tr>
<tr>
<td>Bundoora</td>
<td>87.0</td>
<td>13.0</td>
</tr>
<tr>
<td>Mildura</td>
<td>80.0</td>
<td>20.0</td>
</tr>
<tr>
<td>Shepparton</td>
<td>69.6</td>
<td>30.4</td>
</tr>
</tbody>
</table>
Q2. Highest level of education completed: *(Circle only one answer)*

a. Secondary School
b. University
c. Other (please specify) .................................

**Theme: Demographic data**

**Purpose of Question: Prior education**

**Results and Interpretation**

Over 84% of respondents had completed secondary school, with 6.9% university graduates and another 8.3% ‘others’ (mostly TAFE certificate students).

<table>
<thead>
<tr>
<th>Highest level of education completed</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary school</td>
<td>846</td>
<td>84.6</td>
</tr>
<tr>
<td>University</td>
<td>69</td>
<td>6.9</td>
</tr>
<tr>
<td>Other (mostly TAFE)</td>
<td>83</td>
<td>8.3</td>
</tr>
<tr>
<td>Invalid</td>
<td>2</td>
<td>.2</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Q3. Health sciences discipline area in which you are enrolled: *(Circle only one answer)*

a. Health Information Management
b. Nursing and Midwifery
c. Occupational Therapy
d. Orthoptics
e. Physiotherapy
f. Podiatry
g. Prosthetics and Orthotics
h. Public Health
i. Social Work / Human Services
j. Speech Pathology
k. Other (please specify)

**Theme: Demographic data**

**Purpose of Question: Health Sciences discipline**

**Results and Interpretation**

The largest number of respondents by far were enrolled to become nurses (32%), while the smallest group were the prosthetics and orthotics students (1.9%).

The other eight disciplines each comprised between 3-10% of the total. The ‘other’ group (14.3%) were comprised mainly of Bachelor of Health Sciences students.
Q4. Which campus do you attend? (Circle only one answer)

a Albury/Wodonga
b Bendigo
c Bundoora
d City Campus (Franklin St)
e Mildura
f Shepparton
g Other (please specify) ........................................

Theme: Demographic Data
Purpose of Question: Campus
Results and Interpretation
As expected, 69.1% of respondents were from the Bundoora campus, with 19% at Bendigo and 6.9% at Albury Wodonga. The smaller campuses, Mildura (2.5%) and Shepparton (2.3%) had the lowest relative numbers.

<table>
<thead>
<tr>
<th>Which campus do you attend?</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albury/Wodonga</td>
<td>69</td>
<td>6.9</td>
</tr>
<tr>
<td>Bendigo</td>
<td>190</td>
<td>19.0</td>
</tr>
<tr>
<td>Bundoora</td>
<td>691</td>
<td>69.1</td>
</tr>
<tr>
<td>City Campus</td>
<td>2</td>
<td>.2</td>
</tr>
<tr>
<td>Mildura</td>
<td>25</td>
<td>2.5</td>
</tr>
<tr>
<td>Shepparton</td>
<td>23</td>
<td>2.3</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>
4.2 Document/resource type - analysis

Q5. In order to become familiar with a subject about which I know very little, first I consult:  
(Please number in order of importance 1 = most important, 8 = least important)

a) A journal  
b) Ask a friend  
c) An encyclopaedia  
d) A blog  
e) A database  
f) Google  
g) A book  
h) Wikipedia  
i) Other (please specify) ……………..

Theme: Document/Resource type
Purpose of Question: Appropriateness of resource chosen by student

Results and Interpretation
In question five, respondents were asked to rank from 1-8 the most to least important resources they would use to familiarise themselves with a new subject.

The La Trobe pre experience survey and the Mittermeyer survey both used similar wording for question five, but the La Trobe answer set had eight possible answers, while the Mittermeyer cohort had only four choices. La Trobe respondents were asked to rank a wide variety of traditional print and non-traditional electronic resources they would use to familiarise themselves with a new subject.

At La Trobe, 1st, 2nd and 3rd places were held by Google, friend and book (35%, 34.4% and 24.7% respectively). Friend is a very close contender for first place, just pipped by Google.

Cumulatively, Google holds its 1st place, with 74.8% of respondents rating Google 1st, 2nd and 3rd most important, while 62.8% of the respondents answered that book was in their top three places to start. When the cumulative 1st, 2nd and 3rd places are examined, friend drops to third place after book (58.2% of responses).

<table>
<thead>
<tr>
<th>In order to become familiar with a subject about which I know very little, first I consult:</th>
<th>Percent first choice</th>
<th>Cumulative percent first and second choice</th>
<th>Cumulative percent first, second and third choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
<td>35.0</td>
<td>62.2</td>
<td>74.8</td>
</tr>
<tr>
<td>Friend</td>
<td>34.4</td>
<td>47</td>
<td>58.2</td>
</tr>
<tr>
<td>Book</td>
<td>24.7</td>
<td>42.9</td>
<td>62.8</td>
</tr>
<tr>
<td>Database</td>
<td>12.5</td>
<td>23.7</td>
<td>36.1</td>
</tr>
<tr>
<td>Wikipedia</td>
<td>11.4</td>
<td>25.8</td>
<td>41.6</td>
</tr>
<tr>
<td>Encyclopaedia</td>
<td>10.6</td>
<td>16.9</td>
<td>31.7</td>
</tr>
<tr>
<td>Journal</td>
<td>9.4</td>
<td>15.9</td>
<td>21.9</td>
</tr>
<tr>
<td>Blog</td>
<td>9.2</td>
<td>10.1</td>
<td>12.3</td>
</tr>
<tr>
<td>Other (family, lecturer, teacher, mentor, Library website, parent, mum)</td>
<td>.8</td>
<td>1</td>
<td>1.1</td>
</tr>
</tbody>
</table>
Another interesting pattern emerges for Wikipedia which showed a jump in popularity when the cumulative results for 1st - 3rd place are compared (e.g. it moves from 5th to 4th place). At the other end of the spectrum, blogs (12.3%) and journals (21.9%) were least popular in this cohort as a way of familiarising themselves with new subject areas (either as a first choice or in the top three places).

**La Trobe - Mittermeyer relevant results comparison**

Mittermeyer identified ‘encyclopaedia’ as the correct answer to this question, however in the La Trobe survey, there was no single correct answer, as the enquiry was structured to explore the respondent’s behaviours.

Given that Mittermeyer survey data was collected in July 2002, and since then, access to the internet by a generation of students has affected information seeking preferences and behaviours, it is difficult to compare the two sets of results.

<table>
<thead>
<tr>
<th>In order to become familiar with a subject about which I know very little, first I consult:</th>
<th>Percent Mittermeyer</th>
<th>Percent LaTrobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal</td>
<td>6.4</td>
<td>3.5</td>
</tr>
<tr>
<td>Encyclopaedia</td>
<td>50.4</td>
<td>4.2</td>
</tr>
<tr>
<td>Database</td>
<td>15.9</td>
<td>6.0</td>
</tr>
<tr>
<td>Book</td>
<td>13.6</td>
<td>19.6</td>
</tr>
<tr>
<td>Google (no option in the Mittermeyer question)</td>
<td>n/a</td>
<td>35.0</td>
</tr>
</tbody>
</table>

### 4.3 Library expectations - analysis

**Q6. How do you expect to use the Library at La Trobe University? (Circle as many as apply)**

- a Borrow books and other resources
- b Private study
- c Socialise or meet people
- d Use –resources (online books, journals etc.)
- e Print out materials
- f Ask a librarian for help
- g Use the computers
- h Do group work or study

Theme: Library expectations

**Purpose of question:** Library and information literacy planning

**Results and interpretation**

In this question respondents were asked to circle as many options as they felt applied. To analyse this question the numbers circling each question were totalled. This provides information for the expectations of the entire cohort, and seems to indicate that the Library brand ‘books’ remains a strong theme amongst this cohort and age group. These results also have implications for the use of space in the Library buildings on all campuses, with high numbers indicating an expectation of private study and group work in the building and extremely few expecting a fully online library collection or service.

Since respondents could circle as many as applied, the answers to this question were scored as ‘yes’ I expect to or ‘no’ I do not expect to.
How do you expect to use the Library at La Trobe University? (multiple selections)  

<table>
<thead>
<tr>
<th>Expectation</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borrow</td>
<td>948</td>
<td>94</td>
</tr>
<tr>
<td>Private study</td>
<td>859</td>
<td>85.9</td>
</tr>
<tr>
<td>Socialise</td>
<td>155</td>
<td>15.5</td>
</tr>
<tr>
<td>Use e resources</td>
<td>694</td>
<td>69.4</td>
</tr>
<tr>
<td>Print</td>
<td>712</td>
<td>71.2</td>
</tr>
<tr>
<td>Ask a librarian</td>
<td>535</td>
<td>53.5</td>
</tr>
<tr>
<td>Use computers</td>
<td>771</td>
<td>77.1</td>
</tr>
<tr>
<td>Do group work</td>
<td>850</td>
<td>85</td>
</tr>
<tr>
<td>Only expect to use the Library on the web</td>
<td>5</td>
<td>.5</td>
</tr>
<tr>
<td>Don’t expect to use the Library at all</td>
<td>2</td>
<td>.2</td>
</tr>
</tbody>
</table>

Given the answers to this question, it seems respondents already have a wide variety of expectations of, and preconceptions about their University Library when they arrive on day one of semester, perhaps based on the way they used their library in their home town or at secondary school.

The focus of answers seemed to be on traditional library uses e.g. print book borrowing (94.8%), private study (85.9%), group study (85%), with very few expecting to have a virtual library service or collection. Notably only 2 of the 1000 respondents did not expect to use the Library at all. With only 15.5% indicating they expected to socialise in the Library, one can hypothesise that this use is not encouraged in secondary schools.

Somewhat surprisingly, only 69.4% expected to use electronic library resources, and again it may be that this cohort believes all necessary information is available for free via the internet, not realising that at University their access is provided by the Library. This is another area for further investigation.

4.4 Internet access and classes - analysis

Theme: Prior information seeking classes

Purpose of question: Effect of prior classes on performance in the knowledge questions

Results and interpretation

More than half of the students in this cohort (59.8%) had library classes on finding and using information in their most recent educational institution. Those with no classes formed 28.5% of the total, with the remaining 10.7% unsure. Later in this report, these two different groups e.g. those with no classes and those with classes, are compared to see how they fared in the ‘knowledge’ questions in the last half of the survey.
At my most recent educational experience e.g. school, TAFE, college

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had information seeking classes</td>
<td>598</td>
<td>59.8</td>
</tr>
<tr>
<td>Did not have information seeking classes</td>
<td>285</td>
<td>28.5</td>
</tr>
<tr>
<td>Did not know</td>
<td>107</td>
<td>10.7</td>
</tr>
<tr>
<td>Invalid</td>
<td>10</td>
<td>1.0</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Q8. At my most recent educational institution experience: (Circle only one answer)

a  I had access to internet computer facilities
b  I did not have access to internet computer facilities
c  Don’t know

Theme: Access to internet computer facilities

Purpose of question: Effect of access to internet computer facilities on information seeking behaviour

Results and interpretation
The vast majority, 96.4%, had access to the internet at their most recent educational institution. This result is not surprising and accords well with the findings of other Australian surveys on internet access.

<table>
<thead>
<tr>
<th>At my most recent educational institutional experience:</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>I had access to internet computer facilities</td>
<td>964</td>
<td>96.4</td>
</tr>
<tr>
<td>I did not have access to internet computer facilities</td>
<td>25</td>
<td>2.5</td>
</tr>
<tr>
<td>Did not know</td>
<td>7</td>
<td>.7</td>
</tr>
<tr>
<td>Invalid</td>
<td>4</td>
<td>.4</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Q9. At home currently:  *(Circle only one answer)*

- a I have internet computer access whenever I need to use it
- b I have internet computer access but cannot use if often
- c I do not have internet computer access
- d Don’t know

### Theme: Current computer access

### Purpose of question: Effect of current internet computer access on information seeking behaviour

### Results and interpretation

Of those responding to the survey over 89% had access to the internet whenever they needed it, with 4.1% having irregular or limited access at home.

<table>
<thead>
<tr>
<th>At home currently:</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have internet computer access whenever I need to use it</td>
<td>895</td>
<td>89.5</td>
</tr>
<tr>
<td>I have internet computer access but cannot use if often</td>
<td>57</td>
<td>5.7</td>
</tr>
<tr>
<td>I do not have internet computer access</td>
<td>41</td>
<td>4.1</td>
</tr>
<tr>
<td>Did not know</td>
<td>3</td>
<td>.3</td>
</tr>
<tr>
<td>Invalid</td>
<td>4</td>
<td>.4</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>
4.5 The ‘Knowledge’ questions and analysis

Questions 10 – 20 The ‘Knowledge’ questions

The questions relating to students’ knowledge, use of scholarly resources and perception of where to start can be divided as follows:

- scholarly information tools
- relevant resources to use
- best search strategies

There were eleven questions that were designed to test respondents’ knowledge and understanding of scholarly information seeking. Questions covered assessing the quality of an internet site, peer review, referencing, searching strategies and plagiarism. These questions test the knowledge and skills, which correspond with the La Trobe University Library Information Literacy Policy and Framework\(^2\), and the international development of graduate capabilities for lifelong learning.

**Theme: Knowledge of search tools**

**Purpose of question**

Question 10 aimed to find out about students knowledge and awareness of different search tools and their choice of resource when the task is to find scholarly articles. Choice of search tool is an important first step in a search strategy and differs depending on the type of documents required.

**Results and interpretation**

While all choices listed will yield results, in an academic environment option b, a database, is considered the most efficient search tool for locating scholarly journal articles. Only 11% of respondents chose this answer. An additional 3% of respondents circled more than one option and included b.

Over a third of respondents (33%) selected Google. 21% of respondents selected the Library catalogue as the correct answer while 15% selected the journals in the Library. E-journals in the catalogue and journals on the shelf in the Library can both be browsed; however, the library catalogue does not index journal articles so these options are not efficient methods of searching for scholarly articles\(^1\).

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Accessed 27 May 2009
These results show that the majority of students beginning first year Health Sciences are not familiar with the concept of using databases for finding scholarly journal articles.

**La Trobe - Mittermeyer relevant results comparison**

More respondents in the Mittermeyer survey selected the best answer *b* a database and less selected the internet search engine *c* as a tool for finding journal articles.

It is not surprising that many more selected the search engine option in 2009 considering the prominence of Google as search tool*.

<table>
<thead>
<tr>
<th>If I want to find scholarly journal articles about the impact of global warming I will search</th>
<th>Frequency</th>
<th>Percent Mittermeyer</th>
<th>Percent LaTrobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invalid</td>
<td>6</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>The Library catalogue</td>
<td>213</td>
<td>21.3</td>
<td></td>
</tr>
<tr>
<td>A database</td>
<td>114</td>
<td>11.4</td>
<td></td>
</tr>
<tr>
<td>Google</td>
<td>338</td>
<td>33.8</td>
<td></td>
</tr>
<tr>
<td>The journals in the Library</td>
<td>153</td>
<td>15.3</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>106</td>
<td>10.6</td>
<td></td>
</tr>
<tr>
<td>More than one option selected</td>
<td>64</td>
<td>6.4</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

*Google
Q11. You have used the words ‘business letters’ in a library catalogue search. No items are found by the computer. What do you conclude? (Circle only one answer)

a The Library does not have any items on this topic
b I have not used the right words
c All items on this topic are already on loan
d The system is down
e Other (please specify): .................................................................
f Don't know

Theme: Knowledge of search strategy

Purpose of question
The purpose of the question is to determine whether students understand the relationship between keyword choice and search results.

Results and interpretation
The majority of students selected the right answer, which indicates that entry level students have a good grasp of the influence of keyword selection on search results in this context. It may be that Google use has given this student cohort a high level of familiarity with how keywords function in the search strategy.

<table>
<thead>
<tr>
<th>You have used the words ‘business letters' in a library catalogue search. No items are found, what do you conclude?</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invalid</td>
<td>15</td>
<td>1.5</td>
</tr>
<tr>
<td>The Library does not have any items on this topic</td>
<td>74</td>
<td>7.4</td>
</tr>
<tr>
<td><strong>I have not used the right words</strong></td>
<td><strong>773</strong></td>
<td><strong>77.3</strong></td>
</tr>
<tr>
<td>All items on this topic are already on loan</td>
<td>14</td>
<td>1.4</td>
</tr>
<tr>
<td>The system is down</td>
<td>14</td>
<td>1.4</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>.6</td>
</tr>
<tr>
<td>Don’t know</td>
<td>84</td>
<td>8.4</td>
</tr>
<tr>
<td>More than one option selected</td>
<td>20</td>
<td>2.0</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>

La Trobe - Mittermeyer relevant results comparison
La Trobe results are very similar to Mittermeyer, as in both instances the vast majority of respondents selected the right answer b.

<table>
<thead>
<tr>
<th>You have used the words ‘business letters' in a library catalogue search. No items are found, what do you conclude?</th>
<th>Percent Mittermeyer</th>
<th>Percent LaTrobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Library does not have any items on this topic</td>
<td>9.0</td>
<td>7.4</td>
</tr>
<tr>
<td><strong>I have not used the right words</strong></td>
<td><strong>86.2</strong></td>
<td><strong>77.3</strong></td>
</tr>
<tr>
<td>All items on this topic are already on loan</td>
<td>.7</td>
<td>1.4</td>
</tr>
</tbody>
</table>
Q12. You must use a psychology database to find information on: ‘The effect of family relations, on the academic results of primary school students’ (Circle only one answer)

Which combination of words will you use?

a Family relations, academic results, primary school
b Family relations, academic results
c Effect, family relations, academic results
d Effect, family relations, academic results, primary school
e Other (please specify): .................................................................
f Don’t know

Theme: Knowledge of search strategy – concept identification – significant words

Purpose of question
The purpose of the question is to determine how students select concepts for a search strategy, and if they would include the most appropriate keywords?

Results and interpretation
One third of students selected the right answer a which means they were able to isolate the three key concepts in the question. However half (51.1%) the respondents selected c or d which includes the non-significant word ‘effect’ in the combination of words for the search strategy. Is this an Influence of Google searching – more search terms needed to narrow and refine the results perhaps?

<table>
<thead>
<tr>
<th>You must use a psychology database to find information on: 'The effect of family relations, on the academic results of primary school students'.</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invalid</td>
<td>25</td>
<td>2.5</td>
</tr>
<tr>
<td>Family relations, academic results, primary school</td>
<td>322</td>
<td>32.2</td>
</tr>
<tr>
<td>Family relations, academic results</td>
<td>79</td>
<td>7.9</td>
</tr>
<tr>
<td>Effect, family relations, academic results</td>
<td>65</td>
<td>6.5</td>
</tr>
<tr>
<td>Effect, family relations, academic results, primary school</td>
<td>446</td>
<td>44.6</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>.2</td>
</tr>
<tr>
<td>Don’t know</td>
<td>52</td>
<td>5.2</td>
</tr>
<tr>
<td>More than one option selected</td>
<td>9</td>
<td>9.9</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100</td>
</tr>
</tbody>
</table>

La Trobe - Mittermeyer relevant results comparison
La Trobe results are very similar to the Mittermeyer results. In both surveys just over one third of respondents selected the correct answer a, which includes the three key concepts in the essay question. In the La Trobe result more students chose d or c which includes a non-significant word as one of the search terms.

<table>
<thead>
<tr>
<th>You must use a psychology database to find information on: 'The effect of family relations, on the academic results of primary school students'.</th>
<th>Percent Mittermeyer</th>
<th>Percent LaTrobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family relations, academic results, primary school</td>
<td>34.5</td>
<td>32.2</td>
</tr>
<tr>
<td>Effect, family relations, academic results</td>
<td>9.9</td>
<td>6.5</td>
</tr>
<tr>
<td>Effect, family relations, academic results, primary school</td>
<td>29.0</td>
<td>44.6</td>
</tr>
</tbody>
</table>
Q13. Which one of the following citations refers to a journal article? (Circle only one answer)

d. Don't know

Theme: Understanding citations

Purpose of question
The purpose of the question is to determine whether students are able to recognise a journal article citation. Understanding citations is a threshold skill that all students need in order to be able to assess the relevance of particular citations and know how to find them.

Results and interpretation
Only 23% of students selected the right answer b, which means that the majority of students in the cohort would not be able to identify journal article citation in a bibliography or reading list - a fundamental skill for entry-level students in an academic environment.

<table>
<thead>
<tr>
<th>Which one of the following citations refers to a journal article?</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invalid</td>
<td>37</td>
<td>3.7</td>
</tr>
<tr>
<td>Book</td>
<td>139</td>
<td>13.9</td>
</tr>
<tr>
<td><strong>Journal</strong></td>
<td><strong>238</strong></td>
<td><strong>23.8</strong></td>
</tr>
<tr>
<td>Chapter</td>
<td>245</td>
<td>24.5</td>
</tr>
<tr>
<td>Don't know</td>
<td>340</td>
<td>34.0</td>
</tr>
<tr>
<td>More than one option selected</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100</td>
</tr>
</tbody>
</table>

As might be expected, the higher a student's level of previous education, the more likely they are to correctly identify the journal article citation. Only 21% of students whose previous level of education was secondary school were able to correctly identify the journal article citation, while 47% of students whose previous level of education was university were able to correctly identify the journal article citation.

La Trobe - Mittermeyer relevant results comparison
Mittermeyer results show that one third of students are able to identify a journal article citation.

<table>
<thead>
<tr>
<th>Which one of the following citations refers to a journal article?</th>
<th>Percent Mittermeyer</th>
<th>Percent LaTrobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book</td>
<td>10.6</td>
<td>13.9</td>
</tr>
<tr>
<td><strong>Journal</strong></td>
<td><strong>35.8</strong></td>
<td><strong>23.8</strong></td>
</tr>
<tr>
<td>Chapter</td>
<td>35.8</td>
<td>24.5</td>
</tr>
<tr>
<td>Don't know</td>
<td>17.8</td>
<td>34.0</td>
</tr>
</tbody>
</table>
Q14. A friend told me that I should read an article by John Broome about the ethics of climate change in the June 2008 edition of Scientific American.

To check the availability of this article in the Library, I search in the catalogue under: *(Circle only one answer)*

- a Scientific American
- b John Broome
- c The ethics of climate change
- d Answers a, b, and c are correct
- e Other
- f Don't know

### Theme: Searching the catalogue

#### Purpose of question
The purpose of the question is to determine whether students are able to recognise the elements of a journal article citation that is used to discover the journal in the library catalogue. The question also probes whether students understand that the library catalogue lists journal titles rather than indexing the articles in journals.

#### Results and interpretation
Only 13% of students selected the right answer a, which indicates that the majority of students in the cohort do not understand the catalogue content and search function and therefore would find it difficult to locate the journal article in the library.

<table>
<thead>
<tr>
<th>A friend told me that I should read an article by John Broome about the ethics of climate change in the June 2008 edition of Scientific American. To check the availability of this article in the Library, I search in the catalogue under:</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invalid</td>
<td>34</td>
<td>3.4</td>
</tr>
<tr>
<td>Scientific American</td>
<td>134</td>
<td>13.4</td>
</tr>
<tr>
<td>John Broome</td>
<td>375</td>
<td>37.5</td>
</tr>
<tr>
<td>The Ethics of climate change</td>
<td>90</td>
<td>9.0</td>
</tr>
<tr>
<td>Answers (a), (b), and (c) are correct</td>
<td>292</td>
<td>29.2</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>.1</td>
</tr>
<tr>
<td>Don't know</td>
<td>59</td>
<td>5.9</td>
</tr>
<tr>
<td>More than one option selected</td>
<td>15</td>
<td>1.5</td>
</tr>
<tr>
<td>Total:</td>
<td>1000</td>
<td>100</td>
</tr>
</tbody>
</table>

However of the students that could recognise a journal article citation correctly (238 respondents) only 52 could also identify the journal title as the correct citation element to use for a library catalogue search. This means a very small minority (5.2%) of the total cohort can both recognise a journal article citation and know how to find it in the library catalogue using the correct search strategy i.e. by journal title.

The large majority incorrectly believe that they can search the catalogue on any element of the citation (29%) or search for journal titles using article author (37.5%).
La Trobe - Mittermeyer relevant results comparison
Mittermeyer results are similar; 19.7% selected the correct answer a, compared to La Trobe (13.4%).

In a recent University of Melbourne study, 22% of the study group had the skills to locate the journal article using the library catalogue. This corresponds closely with their 2002 study group when only 22% were able to demonstrate that they would be able to find a journal using the library catalogue.

<table>
<thead>
<tr>
<th>A friend told me that I should read an article by John Broome about the ethics of climate change in the June 2008 edition of Scientific American. To check the availability of this article in the Library, I search in the catalogue under:</th>
<th>Percent Mittermeyer</th>
<th>Percent LaTrobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific American</td>
<td>19.7</td>
<td>13.4</td>
</tr>
<tr>
<td>John Broome</td>
<td>5.2</td>
<td>37.5</td>
</tr>
<tr>
<td>The Ethics of climate change</td>
<td>5.5</td>
<td>9.0</td>
</tr>
<tr>
<td>Answers a b and c are correct</td>
<td>62.7</td>
<td>29.2</td>
</tr>
</tbody>
</table>

Q15. To find all the information about Tim Winton in the Library catalogue, I would do a search: (Circle only one answer)

a. By title
b. By publisher
c. By subject
d. By author
e. Other (please specify): .........................................................
f. Don’t know

Theme: Searching the Library Catalogue

Purpose of question:
This question tests the understanding of the search indexes, and the structure and content of the fields in a library catalogue or database.

Results and interpretation
The correct answer c was chosen by less than one fifth (18.6%) of students. The greatest number of responses were option d by author (60.8%). These students could not make the distinction between books by an author and books about an author, thereby making the connection between a subject being ‘about’ something. The mere mention of an author is potentially confusing.
La Trobe - Mittermeyer relevant results comparison

Mittermeyer respondents chose only one answer & had a similar response.

<table>
<thead>
<tr>
<th>To find all the information about Tim Winton in the Library catalogue, I would do a search:</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>By title</td>
<td>74</td>
<td>7.4</td>
</tr>
<tr>
<td>By title (plus publisher, subject, author)</td>
<td>12</td>
<td>1.2</td>
</tr>
<tr>
<td>By Publisher</td>
<td>21</td>
<td>2.1</td>
</tr>
<tr>
<td>By Publisher (plus author)</td>
<td>2</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>By Subject</strong></td>
<td><strong>186</strong></td>
<td><strong>18.6</strong></td>
</tr>
<tr>
<td>By Subject (plus author)</td>
<td>3</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>By Author</strong></td>
<td><strong>608</strong></td>
<td><strong>60.8</strong></td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>0.2</td>
</tr>
<tr>
<td>Don’t know</td>
<td>61</td>
<td>6.1</td>
</tr>
<tr>
<td>Invalid</td>
<td>31</td>
<td>3.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1000</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>To find all the information about Tim Winton in the Library catalogue, I would do a search:</th>
<th>Percent Mittermeyer</th>
<th>Percent LaTrobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>By subject</td>
<td>29.5</td>
<td>18.6</td>
</tr>
<tr>
<td>By author</td>
<td>67.9</td>
<td>60.8</td>
</tr>
</tbody>
</table>

Q16. You have to write a paper on the ‘Treatment of depression’. Which search strategy will find the least number of items? *(Circle only one answer)*

<table>
<thead>
<tr>
<th></th>
<th>Mittermeyer</th>
<th>LaTrobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>depression and psychotherapy</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>depression or psychotherapy or antidepressants</td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>depression and psychotherapy and antidepressants</td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>depression</td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>Other (please specify): .................................................................</td>
<td></td>
</tr>
<tr>
<td>f</td>
<td>Don’t know</td>
<td></td>
</tr>
</tbody>
</table>

Theme: Boolean operator AND

Purpose of question
To understand that the Boolean operator AND limits a search to results which include all the search terms.

Results and interpretation
More than one third (38.6%) chose the correct answer c *(depression and psychotherapy and antidepressants)* with d *(depression)* coming a close second (30.1%). Interestingly d was the option with one term. Perhaps the respondents choosing that option thought that putting in one term would
retrieve fewer hits. The next best correct answer to c was a (depression and psychotherapy), which was chosen by 4.6% of respondents, but 13.2% if you include all the responses which include a.

Overall, answer b (depression or psychotherapy or antidepressants) which used ‘OR’, recorded the lowest response rate of 9.8%.

There is an indication of some level of Boolean understanding, as approximately half the respondents used the operator AND to limit the search, as respondents answering c (38.7%) and a (13.2%) (total of 51.9%) included the operator AND.

<table>
<thead>
<tr>
<th>You have to write a paper on the ‘Treatment of depression’. Which search strategy will find the least number of items?</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression and psychotherapy</td>
<td>86</td>
<td>8.6</td>
</tr>
<tr>
<td>Depression and psychotherapy (plus depression)</td>
<td>1</td>
<td>.1</td>
</tr>
<tr>
<td>Depression or psychotherapy or antidepressants</td>
<td>98</td>
<td>9.8</td>
</tr>
<tr>
<td><strong>Depression and psychotherapy and antidepressants</strong></td>
<td><strong>386</strong></td>
<td><strong>38.6</strong></td>
</tr>
<tr>
<td>Depression and psychotherapy and antidepressants (plus depression)</td>
<td>1</td>
<td>.1</td>
</tr>
<tr>
<td>Depression</td>
<td>301</td>
<td>30.1</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>.1</td>
</tr>
<tr>
<td>Don’t know</td>
<td>80</td>
<td>8.0</td>
</tr>
<tr>
<td>Invalid</td>
<td>46</td>
<td>4.6</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**La Trobe - Mittermeyer relevant results comparison**
Mittermeyer correct responses were greater than La Trobe, with most of La Trobe responses split between the correct answer c and option d

<table>
<thead>
<tr>
<th>You have to write a paper on the ‘Treatment of depression’. Which search strategy will find the least number of items?</th>
<th>Percent Mittermeyer</th>
<th>Percent LaTrobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression and psychotherapy and antidepressants</td>
<td>61.3</td>
<td>38.6</td>
</tr>
<tr>
<td>Depression and psychotherapy</td>
<td>6.9</td>
<td>4.6</td>
</tr>
<tr>
<td>Depression</td>
<td>16.7</td>
<td>30.1</td>
</tr>
<tr>
<td>Depression or psychotherapy or antidepressants</td>
<td>10.8</td>
<td>9.8</td>
</tr>
</tbody>
</table>
Q17. Some of the items that can be found in the Library catalogue include: (Circle as many as apply)

a. All the titles of the books available in the Library
b. All the titles of the books available on the market
c. All the titles of articles found in the journals available in the Library
d. All the titles of journals available in the Library
e. None of the above
f. Don’t know

Theme: Catalogue contents

Purpose of question
Do students know what types of searches would be possible and what content, in a library catalogue, generally? Respondents are directed to circle as many as apply

Results and interpretation
A and d are correct. The number answering only a d combination was 7.6%. However, all responses which included a are 71.3% and d are 59.1%. Most respondents thought that a c d was correct (39.8%) which included the incorrect response of thinking that articles are listed in the Library catalogue. In fact, c was included in 57.4% of responses overall – so this was a common thought. Respondents answering ‘don’t know’ were 18.5% of the cohort.

<table>
<thead>
<tr>
<th>Some of the items that can be found in the Library catalogue include:</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>All the titles of the books and journals available in the Library</td>
<td>76</td>
<td>7.6</td>
</tr>
<tr>
<td>All the titles of the books available in the Library, on the market, articles and journal titles</td>
<td>239</td>
<td>23.9</td>
</tr>
<tr>
<td>All the titles of books, journal articles and journals</td>
<td>398</td>
<td>39.8</td>
</tr>
<tr>
<td>All the titles of books available on the market</td>
<td>6</td>
<td>.6</td>
</tr>
<tr>
<td>All the titles of books available on the market, articles and journals</td>
<td>8</td>
<td>.8</td>
</tr>
<tr>
<td>All the titles of articles found in the journals available in the Library</td>
<td>18</td>
<td>1.8</td>
</tr>
<tr>
<td>All the titles of journals available in the Library</td>
<td>8</td>
<td>.8</td>
</tr>
<tr>
<td>None of the above</td>
<td>6</td>
<td>.6</td>
</tr>
<tr>
<td>Don’t know</td>
<td>185</td>
<td>18.5</td>
</tr>
<tr>
<td>Invalid</td>
<td>56</td>
<td>5.6</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>

La Trobe - Mittermeyer relevant results comparison – Overall, a similar response

<table>
<thead>
<tr>
<th>Some of the items that can be found in the Library catalogue include:</th>
<th>Percent Mittermeyer</th>
<th>Percent LaTrobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest response a c and d - all titles of books, journal articles and journals in the Library</td>
<td>45.4</td>
<td>39.8</td>
</tr>
</tbody>
</table>
Q18. Among the characteristics that are used to evaluate the quality of an internet site I would check:  (*Circle as many as apply*)

- a. The date of publication is provided
- b. The author is known in the field
- c. Responsibility for the site is clearly indicated
- d. The site is rapidly accessible
- e. None of the above
- f. Don't know

**Theme: Evaluating internet information**

**Purpose of question**
What criteria are used to evaluate the quality of internet information?

**Results and interpretation**
The best answer which was a, b and c was selected by 23.8% of respondents. But any response including a or b or c totaled 73.9% (even if it included other answers and did not include all of a, b and c). The results show some indication of awareness of relevant criteria, in that less than one third of responses included the best answer, and the relevant criteria is included in almost three quarters of responses. It could also be argued that accessibility is an element of a quality internet site; therefore, this option is not necessarily incorrect either. There is indication of some confusion showed by the mixed responses, and the 16.5% of respondents who did not know.

<table>
<thead>
<tr>
<th>Among the characteristics that are used to evaluate the quality of an internet site I would check:</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>The date of publication is provided</td>
<td>96</td>
<td>9.6</td>
</tr>
<tr>
<td>The date of publication is provided, author, responsibility and accessibility</td>
<td>265</td>
<td>26.5</td>
</tr>
<tr>
<td>The date of publication is provided, author and responsibility</td>
<td>238</td>
<td>23.8</td>
</tr>
<tr>
<td>The author is known in the field</td>
<td>55</td>
<td>5.5</td>
</tr>
<tr>
<td>The author is known in the field (plus responsibility and accessibility)</td>
<td>30</td>
<td>3.0</td>
</tr>
<tr>
<td>Responsibility for the site is clearly indicated</td>
<td>52</td>
<td>5.2</td>
</tr>
<tr>
<td>Responsibility for the site is clearly indicated (plus accessibility)</td>
<td>3</td>
<td>.3</td>
</tr>
<tr>
<td>The site is rapidly accessible</td>
<td>15</td>
<td>1.5</td>
</tr>
<tr>
<td>None of the above</td>
<td>16</td>
<td>1.6</td>
</tr>
<tr>
<td>Don’t know</td>
<td>165</td>
<td>16.5</td>
</tr>
<tr>
<td>Invalid</td>
<td>65</td>
<td>6.5</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**La Trobe - Mittermeyer relevant results comparison** shows a similar result.

<table>
<thead>
<tr>
<th>Among the characteristics that are used to evaluate the quality of an internet site I would check:</th>
<th>Percent Mittermeyer</th>
<th>Percent LaTrobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students selecting, the date of publication, author and responsibility</td>
<td>23.0</td>
<td>23.8</td>
</tr>
</tbody>
</table>
Q19. You found magazine articles and web pages presenting different views on a current issue and you want to use this information to write your paper.

In which case(s) do you need to include a reference to the source of information?  (Circle as many as apply)

a. When I copy word for word a paragraph from a magazine article
b. When I copy word for word a paragraph from a Web page
c. When I write in my own words what is being said in a magazine article
d. When I write in my own words what is being said in a web page
e. In none of the above cases
f. Don’t know

Theme: Referencing

Purpose of question
Do students know when to include a reference to the information source?

Results and interpretation
Less than one third of respondents answered correctly a b c and d (28.3%) that in all cases listed, they would need to reference the source. The next most common answer was a and b (25.4%) which focused only on the need to reference if one directly quoted word for word.

This result shows that some respondents are aware of the need to reference but there is less awareness of the need to include the source when paraphrasing. This is reflected in the figures of how many respondents included only a (60.5%) or b (58.1%) – the ‘word for word’ answers, as compared to c (40.2%) or d (37.5%) – the ‘in my own words’ answers.

Respondents answering ‘don’t know’ and ‘in none of the above cases’, plus invalid were 24.0%.

<table>
<thead>
<tr>
<th>In which case(s) do you need to include a reference to the source of information? Circle as many as apply</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word for word a paragraph from a magazine article</td>
<td>52</td>
<td>5.2</td>
</tr>
<tr>
<td>Combination of word for word a paragraph from a magazine article plus word for word web page, own words article and web page</td>
<td>270</td>
<td>27.0</td>
</tr>
<tr>
<td>Students responding to all four correct options - word for word from a magazine article and web page, and in own words from a magazine article and web page</td>
<td>283</td>
<td>28.3</td>
</tr>
<tr>
<td>Word for word a paragraph from a web page</td>
<td>27</td>
<td>2.7</td>
</tr>
<tr>
<td>Word for word a paragraph from a web page, plus in own word from magazine article and web page</td>
<td>7</td>
<td>0.7</td>
</tr>
<tr>
<td>Write in my own words what is being said in a magazine article</td>
<td>38</td>
<td>3.8</td>
</tr>
<tr>
<td>Write in my own words what is being said in a magazine article and a web page</td>
<td>62</td>
<td>6.2</td>
</tr>
<tr>
<td>Write in my own words what is being said in a web page</td>
<td>21</td>
<td>2.1</td>
</tr>
<tr>
<td>In none of the above cases</td>
<td>14</td>
<td>1.4</td>
</tr>
<tr>
<td>Don’t know</td>
<td>151</td>
<td>15.1</td>
</tr>
<tr>
<td>Invalid</td>
<td>75</td>
<td>7.5</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>
La Trobe - Mittermeyer relevant results comparison shows a similar result of students selecting the correct response

<table>
<thead>
<tr>
<th>You found magazine articles and web pages presenting different views on a current issue and you want to use this information to write your paper. In which case(s) do you need to include a reference to the source of information?</th>
<th>Percent Mittermeyer</th>
<th>Percent LaTrobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students responding to all four correct options - word for word a paragraph from a magazine article and paragraph from a web page, and in own words from a magazine article and web page</td>
<td>27.6</td>
<td>28.3</td>
</tr>
</tbody>
</table>

Q20. Which of the following best describe(s) articles published in a peer-reviewed scholarly journal?  
(Circle as many as apply)

- a. The information is written for the general public
- b. It includes a list of references
- c. The research method used is described
- d. It has been evaluated by an editorial board
- e. None of the above
- f. Don’t know

Theme: Scholarly journals

Purpose of question
Is there an awareness of what peer-reviewed scholarly journal might mean?

Results and interpretation
The highest percentage of respondents to this question answered ‘don’t know’ (45.2%). The correct answer was b, c and d, which was given by 4.5% of respondents only. Any responses that included some of the correct answers were: b (23.7%), c (17.2%) and d (21%).

| Which of the following best describe(s) articles published in a peer-reviewed scholarly journal?  
(Circle as many as apply) | Frequency | Percent |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Information is written for the general public</td>
<td>74</td>
<td>7.4</td>
</tr>
<tr>
<td>Information is written for the general public plus includes reference, research method described, and evaluated by an editorial board</td>
<td>138</td>
<td>13.8</td>
</tr>
<tr>
<td>Includes a list of references</td>
<td>48</td>
<td>4.8</td>
</tr>
<tr>
<td>Includes a list of references, the research method described, and evaluated by an editorial board</td>
<td>45</td>
<td>4.5</td>
</tr>
<tr>
<td>Includes a list of references and 1-2 of other correct elements</td>
<td>34</td>
<td>3.4</td>
</tr>
<tr>
<td>Research method used is described</td>
<td>29</td>
<td>2.9</td>
</tr>
<tr>
<td>Research method used is described plus evaluated by an editorial board</td>
<td>5</td>
<td>.5</td>
</tr>
<tr>
<td>Has been evaluated by an editorial board</td>
<td>72</td>
<td>7.2</td>
</tr>
<tr>
<td>None of the above</td>
<td>12</td>
<td>1.2</td>
</tr>
<tr>
<td>Don’t know</td>
<td>452</td>
<td>45.2</td>
</tr>
<tr>
<td>Invalid</td>
<td>91</td>
<td>9.1</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>
La Trobe - Mittermeyer relevant results comparison

‘Don’t know’ also received the highest percentage of outright answers for Mittermeyer (20.2%). The correct answer, b c and d comprised 14.9 % of responses.

<table>
<thead>
<tr>
<th>Which of the following best describe(s) articles published in a peer-reviewed scholarly journal?</th>
<th>Percent Mittermeyer</th>
<th>Percent LaTrobe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t know</td>
<td>20.2</td>
<td>45.2</td>
</tr>
<tr>
<td>Includes a list of references, the research method described, and evaluated by an editorial board</td>
<td>14.9</td>
<td>4.4</td>
</tr>
</tbody>
</table>
4.5.1 Respondent’s overall score

Noting that more than half the knowledge questions were left blank (e.g. answers may not be wrong, but students may have given up or run out of time), each individual was given a statistical ‘score’ based on their correct answers to the eleven knowledge questions (e.g. 7 multiple choice questions and 4 ‘circle as many as apply’ questions). The scores revealed that no respondent had more than seven correct, and that 93.1% had less than 50% correct. Further analysis showed that 44.1% of the cohort answered correctly only one or two of the eleven knowledge questions.

Assigning the respondents ‘scores’ on the eleven knowledge questions provided a new dimension of measurement, enhancing the La Trobe version of the Mittemeyer survey. Cross tabulations of the respondent scores and campus, health discipline and educational attainment, provided a better understanding of the differences in entry level information seeking skills and knowledge within these subgroups. This is discussed below.

### 4.5.1 Score by Campus, Health Sciences discipline and educational attainment

An analysis of the respondents’ scores by campus found that there were significant differences between the Albury Wodonga and Bendigo mean scores (sig. p=.043).

<table>
<thead>
<tr>
<th>Mean Score * Campus</th>
<th>Campus</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AW</td>
<td>2.4493</td>
<td>69</td>
<td>1.52948</td>
</tr>
<tr>
<td></td>
<td>Bendigo</td>
<td>3.0895</td>
<td>190</td>
<td>1.64828</td>
</tr>
<tr>
<td></td>
<td>Bund’a</td>
<td>2.8834</td>
<td>669</td>
<td>1.59758</td>
</tr>
<tr>
<td></td>
<td>Mildura</td>
<td>2.5600</td>
<td>25</td>
<td>1.15758</td>
</tr>
<tr>
<td></td>
<td>Shep’n</td>
<td>2.6957</td>
<td>23</td>
<td>1.49042</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.8801</td>
<td>976</td>
<td>1.59582</td>
</tr>
</tbody>
</table>

- The mean differences are significant at the 0.05 level
- The Mildura and Shepparton campuses had very small numbers of respondents in the survey results, and conclusions were not extracted.

Respondents who had university education scored significantly better than both ‘other’ and the ‘secondary school’ group. A cross tabulation of the respondents’ scores by educational attainment found that there were significant differences (at the 95% confidence level), between the secondary school (mean score= 2.78) and the university (mean score= 3.88) cohorts, and secondary school and ‘other’ (mean score = 3.06) groups. It is worth noting that only 67 students had university graduate status, while the ‘other’ group (81 respondents) were mostly those with a TAFE certificate.

<table>
<thead>
<tr>
<th>Mean Score * Educ Level</th>
<th>Educ Level</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Secondary school</td>
<td>2.7821</td>
<td>826</td>
<td>1.59042</td>
</tr>
<tr>
<td></td>
<td>University</td>
<td>3.8806</td>
<td>67</td>
<td>1.58135</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>3.0617</td>
<td>81</td>
<td>1.36332</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.8809</td>
<td>974</td>
<td>1.59592</td>
</tr>
</tbody>
</table>
Cross tabulation data also showed that respondents from some of the Health Sciences disciplines performed significantly better (at the 95% probability level), attaining higher information literacy entry scores, than their counterparts in other disciplines.

<table>
<thead>
<tr>
<th>HS Discipline</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Info Manage</td>
<td>2.7692</td>
<td>39</td>
<td>1.49493</td>
</tr>
<tr>
<td>Nursing</td>
<td>2.6943</td>
<td>314</td>
<td>1.49188</td>
</tr>
<tr>
<td>Occupational Therapy</td>
<td>2.8750</td>
<td>96</td>
<td>1.32387</td>
</tr>
<tr>
<td>Orthoptics</td>
<td>3.2955</td>
<td>44</td>
<td>1.45601</td>
</tr>
<tr>
<td>Physiotherapy</td>
<td>3.5109</td>
<td>92</td>
<td>1.75095</td>
</tr>
<tr>
<td>Podiatry</td>
<td>2.9250</td>
<td>40</td>
<td>1.52564</td>
</tr>
<tr>
<td>Prosthetics &amp; Orthotics</td>
<td>4.2105</td>
<td>19</td>
<td>1.75052</td>
</tr>
<tr>
<td>Public Health</td>
<td>2.9032</td>
<td>31</td>
<td>1.75793</td>
</tr>
<tr>
<td>Social Work</td>
<td>2.5250</td>
<td>80</td>
<td>1.63021</td>
</tr>
<tr>
<td>Speech Path</td>
<td>3.2933</td>
<td>75</td>
<td>1.62558</td>
</tr>
<tr>
<td>Other</td>
<td>2.6099</td>
<td>141</td>
<td>1.63783</td>
</tr>
<tr>
<td>Total</td>
<td>2.8857</td>
<td>971</td>
<td>1.59261</td>
</tr>
</tbody>
</table>

Significant differences in scores for the groups are shown with black squares

- Physiotherapy students (mean score = 3.51) performed better than Nursing (mean score = 2.69), Social work (mean score = 2.52) and ‘other’ students.
- Prosthetics and Orthotics (mean score = 4.21) performed better than Nursing (mean score = 2.69), Occupational Therapy (mean score = 2.87) Social Work (mean score = 2.52) and ‘other’ students.
However these choices indicate association between ‘library’ and scholarly information and combined with the correct answer mean 48% of entry-level students connect scholarly information with the library.

Google is perhaps not the ‘poor choice’ that Mittermeyer suggested Yahoo was in 2005.

### Multiple Comparisons: Score by Campus

<table>
<thead>
<tr>
<th>(I) Campus</th>
<th>(J) Campus</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td>Albury</td>
<td>Bendigo</td>
<td>-.64020</td>
<td>.22365</td>
<td>.043</td>
<td>-1.2694</td>
</tr>
<tr>
<td>Wod</td>
<td>Bund</td>
<td>-.43413</td>
<td>.20119</td>
<td>.312</td>
<td>-1.0002</td>
</tr>
<tr>
<td></td>
<td>Mildura</td>
<td>-.11072</td>
<td>.37144</td>
<td>1.000</td>
<td>-1.1558</td>
</tr>
<tr>
<td></td>
<td>Shepn</td>
<td>-.24638</td>
<td>.38312</td>
<td>1.000</td>
<td>-1.3243</td>
</tr>
<tr>
<td>Bendigo</td>
<td>AW</td>
<td>.64020</td>
<td>.22365</td>
<td>.043</td>
<td>.0110</td>
</tr>
<tr>
<td></td>
<td>Bund</td>
<td>.20607</td>
<td>.13081</td>
<td>1.000</td>
<td>-.1620</td>
</tr>
<tr>
<td></td>
<td>Mildura</td>
<td>.52947</td>
<td>.33853</td>
<td>1.000</td>
<td>-.4230</td>
</tr>
<tr>
<td></td>
<td>Shepn</td>
<td>.39382</td>
<td>.35130</td>
<td>1.000</td>
<td>-.5945</td>
</tr>
<tr>
<td>Bund</td>
<td>AW</td>
<td>.43413</td>
<td>.20119</td>
<td>.312</td>
<td>-.1319</td>
</tr>
<tr>
<td></td>
<td>Bendigo</td>
<td>-.20607</td>
<td>.13081</td>
<td>1.000</td>
<td>-.5741</td>
</tr>
<tr>
<td></td>
<td>Mildura</td>
<td>.32341</td>
<td>.32413</td>
<td>1.000</td>
<td>-.5885</td>
</tr>
<tr>
<td></td>
<td>Shepn</td>
<td>.18776</td>
<td>.33744</td>
<td>1.000</td>
<td>-.7616</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the 0.05 level.

### Multiple Comparisons: Score by Education

<table>
<thead>
<tr>
<th>(I) Educ Level</th>
<th>(J) Educ Level</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td>Secondary school</td>
<td>Uni</td>
<td>-1.09851</td>
<td>.19973</td>
<td>.000</td>
<td>-1.5775</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>-.27965</td>
<td>.18307</td>
<td>.381</td>
<td>-.7187</td>
</tr>
<tr>
<td>University</td>
<td>S’daily school</td>
<td>1.09851</td>
<td>.19973</td>
<td>.000</td>
<td>.6195</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>.81887</td>
<td>.25965</td>
<td>.005</td>
<td>.1962</td>
</tr>
<tr>
<td>Other</td>
<td>S’daily school</td>
<td>.27965</td>
<td>.18307</td>
<td>.381</td>
<td>-.1594</td>
</tr>
<tr>
<td></td>
<td>Uni</td>
<td>-.81887</td>
<td>.25965</td>
<td>.005</td>
<td>-.14416</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the 0.05 level.
## Multiple Comparisons: Score by HS Discipline

<table>
<thead>
<tr>
<th>(I) HS Discipline</th>
<th>(J) HS Discipline</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td>Nursing</td>
<td>HIM</td>
<td>.07496</td>
<td>.26495</td>
<td>1.000</td>
<td>-.8067</td>
</tr>
<tr>
<td></td>
<td>Occupational Therapy</td>
<td>-.10577</td>
<td>.29633</td>
<td>1.000</td>
<td>-1.0919</td>
</tr>
<tr>
<td></td>
<td>Orthoptics</td>
<td>-.52622</td>
<td>.34321</td>
<td>1.000</td>
<td>-1.6683</td>
</tr>
<tr>
<td></td>
<td>Physiotherapy</td>
<td>-.74164</td>
<td>.29819</td>
<td>.717</td>
<td>-1.7339</td>
</tr>
<tr>
<td></td>
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<td>0.8118</td>
</tr>
<tr>
<td>Other</td>
<td>-0.6834</td>
<td>0.2230</td>
<td>1.12</td>
<td>-1.4256</td>
<td>0.0588</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the 0.05 level.
5. Discussion

The students in the Health Sciences common first year were administered this 'pre-test' of their information literacy skills upon entry into their course in early March. This test schedule allowed the researchers to assess and then track the information literacy skills attainment of the cohort.

The test contained twenty questions (four demographic questions; five questions on the use of Library resources/assistance; and eleven questions on the discovery and use of scholarly materials). Students were given a 'score' based on correct answers to the 'knowledge' questions, unfortunately the entry level scores showed only a mean of 2.8240 correct answers out of a possible score of eleven).

Respondents also had difficulties in understanding the scholarly journal literature, a prominent and new resource type for university study. Some specific examples include:

- Q10 on searching for scholarly information: only 11.4% of respondents in the pretest were correct
- Q13 on journal article citation: 23% of students were able to identify a journal article citation
- Q14 on elements of a journal citation to search: only 13% were able to recognise that the journal title is the element to search for in the Library catalogue

The report also recognises that there are limitations to this study. Meticulous question design is crucial to obtaining optimum results. While the survey was a pre-tested instrument, it was not an exact fit to La Trobe conditions and practices, and a few of the questions were dated, or irrelevant.

6. Conclusion

This study demonstrates the need for a continual instruction and guidance in information literacy skills throughout the Health Sciences course from first year onwards, in order to promote a deep learning of the scholarly information seeking process, as envisaged by the University's Graduate Capabilities statements. The study provides rich data on which information literacy skills instruction can be tailored to student need, from entry level to setting students on a learning continuum so they are able to develop foundation skills early, and progress to a proficient level of skills by their final year.

7. References

ENIL Questionnaire on information competencies, ENIL (European Network on Information Literacy).
http://www2.ceris.cnr.it/Basili/EnIL/English_questionnaire.html


8. Acknowledgements

Library Health Sciences Evaluation Working Group members:
Jenny Corbin (Faculty Librarian, Health Sciences and Co-ordinator of the Working Group), Eva Fisch (Collection Development Manager), Fiona Salisbury (Learning and Research Services Manager), Sharon Karasmanis (Health Sciences Librarian & Team Leader), Claire Brooks (Educational Design Coordinator), Chris Wanklyn (Faculty Librarian, Health Sciences)

Health Sciences Faculty Librarians at all campuses

Staff within the Faculty of Health Sciences, in particular Kerry Fitzmaurice and Matthew Oates

CTLC (Curriculum Teaching & Learning Centre).

9. Appendix 1 – Library Survey
Library Survey

This survey covers a variety of topics concerning how you look for information for assignments or essays. The goal of this survey is to help us assess your information literacy skills so we can develop tutorials which will match your needs well. This is not a test.

Your responses are anonymous and we will be looking at the results of the group not individuals. So it is important to answer all questions honestly and without asking anyone else. If you don’t know the answer, circle Don’t know.

Your participation is voluntary. If you choose not to answer this survey there is no penalty.

Confidentiality

Under no circumstances will individual student responses be shown to lecturers or other University authorities.

Your answers will be combined with those of other students and used by the University Library to find out about the information skills of whole groups of students.

Thank you for completing the survey.

For questions 1-4, CIRCLE only ONE answer:

1. Age group:
   a  16-18
   b  19-21
   c  22-30
   d  31-40
   e  40+

2. Highest level of education completed:
   a  Secondary School
   b  University
   c  Other (please specify)..............................

3. Health sciences discipline area in which you are enrolled:
   a  Health Information Management
   b  Nursing and Midwifery
   c  Occupational Therapy
   d  Orthoptics
   e  Physiotherapy
   f  Podiatry
   g  Prosthetics and Orthotics
   h  Public Health
   i  Social Work / Human Services
j Speech Pathology
k Other (please specify) .................................................

4. Which campus do you attend?
a Albury/Wodonga
b Bendigo
c Bundoora
d City Campus (Franklin St)
e Mildura
f Shepparton
g Other (please specify) .............................................

For question 5, please number in order of importance 1 = most important … 8 = least important:

5. In order to become familiar with a subject about which I know very little, first I consult:

☐ A journal
☐ Ask a friend
☐ An encyclopaedia
☐ A blog
☐ A database
☐ Google
☐ A book
☐ Wikipedia
☐ Other (please specify) .............................................

For Question 6, CIRCLE as MANY as apply:

6. How do you expect to use the Library at La Trobe University?
a Borrow books and other resources
b Private study
c Socialise or meet people
d Use e-resources (online books, journals etc)
e Print out materials
f Ask a librarian for help
g Use the computers
h Do group work or study
i I only expect to use the library on the web
j I don’t expect to use any library services at all
k Comments …………………………………………………………………………………………………………………
………………………………………………………………………………………………………………

For questions 7-16, CIRCLE only ONE answer:

7. At my most recent educational experience: (e.g. school, TAFE, college)
   a I had classes on finding and using information
   b I did not have classes on finding and using information
   c Don’t know

8. At my most recent educational institution experience:
   a I had access to internet computer facilities
   b I did not have access to internet computer facilities
   c Don’t know

9. At home (currently):
   a I have internet computer access whenever I need to use it
   b I have internet computer access but cannot use it often
   c I do not have internet computer access
   d Don’t know

10. If I want to find scholarly journal articles about the impact of global warming I will search in:
    a The Library catalogue
    b A database
    c Google
    d The journals in the Library
    e Other (please specify)…………………………………………………………………………………………
    f Don’t know
11. You have used the words ‘business letters’ in a library catalogue search. No items are found by the computer. What do you conclude?

a  The Library does not have any items on this topic
b  I have not used the right words
c  All items on this topic are already on loan
d  The system is down
e  Other (please specify): .................................................................
f  Don’t know

12. You must use a psychology database to find information on: ‘The effect of family relations, on the academic results of primary school students’

Which combination of words will you use?

a  Family relations, academic results, primary school
b  Family relations, academic results
c  Effect, family relations, academic results
d  Effect, family relations, academic results, primary school
e  Other (please specify): .................................................................
f  Don’t know

13. Which one of the following citations refers to a journal article?

d  Don’t know

14. A friend told me that I should read an article by John Broome about the ethics of climate change in the June 2008 edition of Scientific American.

To check the availability of this article in the Library, I search in the catalogue under:

a  Scientific American
b  John Broome
c  The Ethics of climate change
d  Answers (a), (b), and (c) are correct
15. To find all the information about Tim Winton in the Library catalogue, I would do a search:

a By title
b By publisher
c By subject
d By author
e Other (please specify): .................................................................
f Don’t know

16. You have to write a paper on the ‘Treatment of depression’. Which search strategy will find the least number of items?

a depression and psychotherapy
b depression or psychotherapy or antidepressants
c depression and psychotherapy and antidepressants
d depression
e Other (please specify):

...........................................................................................................
f Don’t know

For questions 17-20 CIRCLE as MANY as apply:

17. Some of the items that can be found in the Library catalogue include:

a All the titles of the books available in the Library
b All the titles of the books available on the market
c All the titles of articles found in the journals available in the Library
d All the titles of journals available in the Library
e None of the above
f Don’t know
18. Among the characteristics that are used to evaluate the quality of an internet site I would check:

a) The date of publication is provided
b) The author is known in the field
c) Responsibility for the site is clearly indicated
d) The site is rapidly accessible
e) None of the above
f) Don't know

19. You found magazine articles and web pages presenting different views on a current issue and you want to use this information to write your paper.

In which case(s) do you need to include a reference to the source of information?

a) When I copy word for word a paragraph from a magazine article
b) When I copy word for word a paragraph from a Web page
c) When I write in my own words what is being said in a magazine article
d) When I write in my own words what is being said in a web page
e) In none of the above cases
f) Don't know

20. Which of the following best describe(s) articles published in a peer-reviewed scholarly journal?

a) The information is written for the general public
b) It includes a list of references
c) The research method used is described
d) It has been evaluated by an editorial board
e) None of the above
f) Don't know

We thank you very much for your participation - contacts: library@latrobe.edu.au

Your comments are most welcome: .................................................................
...................................................................................................................

Please return the survey to your campus library or hand to your facilitator by 13 March 2009.

Appendix 9 – Pre/post test survey report
Library pre and post experience survey: final report

Faculty of Health Sciences: first year student cohort 2009

3 December 2009

Eva Fisch
Sharon Karasmanis
Fiona Salisbury
Jenny Corbin

On behalf of the Library Health Sciences Evaluation Working Group
Jenny Corbin (Co-ordinator) Eva Fisch Sharon Karasmanis Fiona Salisbury Claire Brooks Chris Wanklyn
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10. Acknowledgements

11. Appendix 1 - Survey Document
1. Executive Summary

This document reports on a project to analyse and evaluate the information literacy skills of the Health Sciences first year student cohort. The data was gathered via a survey distributed during the first week of semester in 2009 which measures student entry level skills, and the same group was surveyed again in September to track the progress of skill development, and measure the effectiveness of Library support and interventions during the year. The report finds that although there was moderate improvement in student information skills development, there are still challenges ahead in both the delivery of information literacy instruction, and student engagement with Library support. The recommendations of the report take up these challenges in a systematic way.

The report also recognises that there are limitations to this study. Meticulous question design is crucial to obtaining optimum results. While the survey was a pre-tested instrument, it was not an exact fit to La Trobe conditions and practices, and a few of the questions were dated, or irrelevant. The optimum time to perform the post experience survey was in early October when the students had completed most of their assessable work, however this did not suit the academic calendar, nor did it allow time for analysis and completion of the report on time.

2. Introduction

The Library has been involved with the redevelopment of the Faculty of Health Sciences’ Common First Year since the idea was first proposed, working collaboratively with academic staff and administrators to shape and develop library collections and services to match the needs of a large student cohort under the enquiry based learning model.

In 2009, a small Library working group began planning how to evaluate the development of Library services in response to the needs of the new pedagogical model. The group developed an evaluation plan with a number of key elements as follows:

- assessing the impact on Library staff, collections, space and services cross campus
- assessing the usability and measuring the effectiveness of the Library’s Health Sciences Information Literacy Modules, and their role in creating learners that are empowered to use evidence routinely and effectively to inform their learning
- gathering data on key successes and areas for improvement from the main stakeholder groups

One of the projects the group has been working on involved a pre-test of first year Health Sciences students to assess their entry level skills and knowledge of the scholarly information seeking process.

This ‘pre-test’ conducted in March 2009, was complemented by a ‘post test’ in September 2009 to measure the degree to which students are developing the characteristics and skills of mature information seekers. These results will be of interest to the wider academic community at La Trobe as a way of mapping the development of various graduate capabilities. The data will also contribute to the wider international discussion of information literacy for lifelong learning.

The project is also part of a larger La Trobe University Library cross campus project to examine the degree to which formal information literacy programs can improve the learning outcomes of students.

This project complies with the relevant ethics guidelines: La Trobe University, Human Research Ethics Guidelines, Staff Survey Guidelines & Student Survey Guidelines¹, and falls into the "negligible risk" category.

3. Literature

The literature reviewed for this project was directly related to survey design and implementation. Although various survey designs were considered, the Mittermeyer (2003) design was the best fit for the current environment and student cohort. It had been internationally benchmarked and validated and, as a multidisciplinary tool, could be applied across other disciplines if required. Further support to this design was the use of this instrument by another Australian university (Bernath and Jenkin, 2006). These resources, in addition to local experience and advice, informed the development of the questionnaire.

It was considered that a print survey handed out in tutorial groups would yield a higher response rate, and this proved to be correct with a response rate of 60% in the pre-test and 67% in the post-test. There was also the need to assess exact entry level skills in semester one, and this distribution design (in consultation with Health Sciences Faculty) enabled the data collection to take place in the first week of semester. The Mittermeyer survey also used a print model, although posted to the student's home address prior to commencement of the academic year.

4. Methodology

The survey of twenty questions (Appendix 1) was handed out during class time (in tutorial groups) by librarians and tutors, and collected at the end of the class. The surveys did not collect information which would allow the participants to be individually identified. The data was coded and analysed using SPSS, by an experienced statistician and past staff member of La Trobe University.

The pre-experience survey (pre-test) was run during the first three days of classes during semester one on 2-4 March 2009 at all five campuses of the University. 1,029 survey forms were collected, with 1,000 usable responses. 1,651 students were enrolled in first year therefore the resulting response rate was 62.32%.


The post-experience (post-test) was run in semester two from 7-10 September at all five campuses, with 1112 survey forms collected, and 1083 usable responses - 83 more than what was collected in the pre-experience survey, and yielding a response rate of 67.35%.

The pre and post-experience surveys and analysis are noted in this document as pre-test and post-test.
5. Survey results

The individual survey results per question are presented in the following order: the survey question followed by the theme, purpose of the question, and results and interpretation.

5.1 Demographic data: age, prior education, health sciences discipline, and campus

Q1. Age group: (Circle only one answer)
   a  16-18
   b  19-21
   c  22-30
   d  31-40
   e  40+

Theme: Demographic data
Purpose of Question: Age
Results and Interpretation
While the students between ages 16-18 formed 50.2% of the total cohort surveyed in the pre-test, when groups a and b are combined they form 84.3% of the total in the pre-test and 82.36% in the post-test, noting that between the pre and the post-test, nearly 25% of students turned 19. This distribution is what would be expected of a first year student group at La Trobe, with fewer matured aged students (2.2% aged over 40), and a predominance of school leavers.

<table>
<thead>
<tr>
<th>Age group:</th>
<th>Frequency Pre-test</th>
<th>Percent Pre-test</th>
<th>Frequency Post-test</th>
<th>Percent Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group a: 16 – 18</td>
<td>502</td>
<td>50.2</td>
<td>284</td>
<td>26.2</td>
</tr>
<tr>
<td>Group b: 19 – 21</td>
<td>341</td>
<td>34.1</td>
<td>608</td>
<td>56.1</td>
</tr>
<tr>
<td>22 – 30</td>
<td>109</td>
<td>10.9</td>
<td>133</td>
<td>12.3</td>
</tr>
<tr>
<td>31 – 40</td>
<td>26</td>
<td>2.6</td>
<td>34</td>
<td>3.1</td>
</tr>
<tr>
<td>40 +</td>
<td>22</td>
<td>2.2</td>
<td>24</td>
<td>2.2</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
<td>1083</td>
<td>100.0</td>
</tr>
</tbody>
</table>

When the data is regrouped into the categories of 21 and under 22 and over, and then cross tabulated by campus, the group with the highest proportion of respondents in the 21 and under group is Bundoora, with Albury/Wodonga and Shepparton having the highest proportion of respondents in the 22 and over age group.
Q2. Highest level of education completed: (Circle only one answer)

a) Secondary School
b) University
c) Other (please specify)…………………………….

Theme: Demographic data

Purpose of Question: Prior education

Results and Interpretation
In the pre-test, over 84% of respondents had completed secondary school, with 6.9% university graduates and another 8.3% ‘others’ (mostly TAFE certificate students). The post test cohort was composed of nearly 10% university graduates, compared to 7% in the pre test cohort. University graduates may be less likely to drop out and more willing to be surveyed, as they have prior experience of the study environment, and are also more confident in their dealings with administrative processes than school leavers and are therefore likely form a larger part of the cohort.

<table>
<thead>
<tr>
<th>Highest level of education completed:</th>
<th>Frequency Pre-test</th>
<th>Percent Pre-test</th>
<th>Frequency Post-test</th>
<th>Percent Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary school</td>
<td>846</td>
<td>84.6</td>
<td>913</td>
<td>84.3</td>
</tr>
<tr>
<td>University</td>
<td>69</td>
<td>6.9</td>
<td>107</td>
<td>9.9</td>
</tr>
<tr>
<td>Other (mostly TAFE)</td>
<td>83</td>
<td>8.3</td>
<td>57</td>
<td>5.3</td>
</tr>
<tr>
<td>Invalid</td>
<td>2</td>
<td>.2</td>
<td>6</td>
<td>.5</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
<td>1083</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Q3. Health sciences discipline area in which you are enrolled: *(Circle only one answer)*

- a) Health Information Management
- b) Nursing and Midwifery
- c) Occupational Therapy
- d) Orthoptics
- e) Physiotherapy
- f) Podiatry
- g) Prosthetics and Orthotics
- h) Public Health i.e. Health Sciences
- i) Social Work / Human Services
- j) Speech Pathology
- k) Other (please specify)

Theme: Demographic data

**Purpose of Question: Health Sciences discipline**

**Results and Interpretation**

In the pre-test, the largest number of respondents were enrolled to become nurses (32% with 34.8% in the post-test), while the smallest group were the Prosthetics and Orthotics (1.9% with 2.5% in the post-test).

The other eight disciplines each comprised between 3-10% of the total. The 'other' group (14.3%) were comprised mainly of Bachelor of Health Sciences students. Option h was mistakenly noted in the survey document as Public Health, this cohort is actually enrolled in the Bachelor of Health Sciences, therefore should be represented as 174 students or 17.4% of respondents approximately.

The pre and post test numbers in the discipline areas were quite similar, with the ‘other’ category decreasing and Nursing, Podiatry and Prosthetics and Orthotics having increased numbers in the post-test. This could be an artefact of the course, or even the survey design, as students may not identify with their discipline until later in the year. Students could also have been given late offers between early March and September and changed their course. There could also have been a slightly different mix that responded to the survey, there was also an increase of 83 usable responses.

<table>
<thead>
<tr>
<th>Health sciences discipline in which you are enrolled:</th>
<th>Frequency Pre-test</th>
<th>Percent Pre-test</th>
<th>Frequency Post-test</th>
<th>Percent Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Information Management</td>
<td>42</td>
<td>4.2</td>
<td>36</td>
<td>3.3</td>
</tr>
<tr>
<td><strong>Nursing and Midwifery</strong></td>
<td><strong>320</strong></td>
<td><strong>32.0</strong></td>
<td><strong>377</strong></td>
<td><strong>34.8</strong></td>
</tr>
<tr>
<td>Occupational Therapy</td>
<td>103</td>
<td>10.3</td>
<td>114</td>
<td>10.5</td>
</tr>
<tr>
<td>Orthoptics</td>
<td>45</td>
<td>4.5</td>
<td>42</td>
<td>3.9</td>
</tr>
<tr>
<td>Physiotherapy</td>
<td>93</td>
<td>9.3</td>
<td>99</td>
<td>9.1</td>
</tr>
<tr>
<td><strong>Podiatry</strong></td>
<td><strong>43</strong></td>
<td><strong>4.3</strong></td>
<td><strong>70</strong></td>
<td><strong>6.5</strong></td>
</tr>
<tr>
<td>Prosthetics and Orthotics</td>
<td>19</td>
<td>1.9</td>
<td>27</td>
<td>2.5</td>
</tr>
<tr>
<td><strong>Public Health</strong> <em>(Health Sciences)</em></td>
<td><strong>31</strong></td>
<td><strong>3.1</strong></td>
<td><strong>56</strong></td>
<td><strong>5.2</strong></td>
</tr>
<tr>
<td>Social Work / Human Services</td>
<td>81</td>
<td>8.1</td>
<td>79</td>
<td>7.3</td>
</tr>
<tr>
<td>Speech Pathology</td>
<td>75</td>
<td>7.5</td>
<td>74</td>
<td>6.8</td>
</tr>
<tr>
<td><strong>Other</strong> <em>(mostly noted as Health Sciences)</em></td>
<td><strong>143</strong></td>
<td><strong>14.3</strong></td>
<td><strong>102</strong></td>
<td><strong>9.4</strong></td>
</tr>
<tr>
<td>Invalid</td>
<td>5</td>
<td>.5</td>
<td>7</td>
<td>.6</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
<td>1083</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Q4. Which campus do you attend? *(Circle only one answer)*

a Albury/Wodonga  
b Bendigo  
c Bundoora  
d City Campus (Franklin St)  
e Mildura  
f Shepparton  
g Other (please specify) ............................................

**Theme: Demographic Data**

**Purpose of Question: Campus**

**Results and Interpretation**

As expected, in the pre-test, 69.1% of respondents were from the Bundoora campus, with 19% at Bendigo and 6.9% at Albury Wodonga. The smaller campuses, Mildura (2.5%) and Shepparton (2.3%) had the lowest relative numbers. The campus affiliation showed some differences between the pre and post-test with Bundoora’s component rising from 69.1% to 76.6% and increase of 139 usable responses. In contrast, all the other campuses had a drop in response rates, with Bendigo dropping 3.5%, and AW dropping 2.5%. There are no students in this cohort at the City Campus.

<table>
<thead>
<tr>
<th>Which campus do you attend?</th>
<th>Frequency Pre-test</th>
<th>Percent Pre-test</th>
<th>Frequency Post-test</th>
<th>Percent Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albury/Wodonga</td>
<td>69</td>
<td>6.9</td>
<td>48</td>
<td>4.4</td>
</tr>
<tr>
<td>Bendigo</td>
<td>190</td>
<td>19.0</td>
<td>168</td>
<td>15.5</td>
</tr>
<tr>
<td>Bundoora</td>
<td>691</td>
<td>69.1</td>
<td>830</td>
<td>76.6</td>
</tr>
<tr>
<td>City Campus</td>
<td>2</td>
<td>.2</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Mildura</td>
<td>25</td>
<td>2.5</td>
<td>15</td>
<td>1.4</td>
</tr>
<tr>
<td>Shepparton</td>
<td>23</td>
<td>2.3</td>
<td>22</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1000</strong></td>
<td><strong>100.0</strong></td>
<td><strong>1083</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
5.2 Document/resource type

Q5. In order to become familiar with a subject about which I know very little, first I consult: (Please number in order of importance 1 = most important, 8 = least important)

a. A journal
b. Ask a friend
c. An encyclopaedia
d. A blog
e. A database
f. Google
g. A book
h. Wikipedia
i. Other (please specify) ……………

Theme: Document/resource type

Purpose of Question: Appropriateness of resource chosen by student

Results and Interpretation

In question five, respondents were asked to rank from 1 - 8 the most to least important resources they would use to familiarise themselves with a new subject. The La Trobe pre-experience survey and the Mittermeyer (2003) survey both used similar wording for question five, but the La Trobe answer set had eight possible answers, while the Mittermeyer survey had only four choices.

Respondents were asked to rank a wide variety of print and electronic resources they would use to familiarise themselves with a new subject.

In the pre-test, first, second and third places were held by Google, friend and book (35%, 34.4% and 24.7% respectively). Friend is a very close contender for first place, just pipped by Google. Cumulatively, Google holds its first place, with 74.8% of respondents rating Google first, second or third as the most important, while 62.8% of the respondents answered that book was in their top three places to start. When the cumulative first, second and third places are examined, friend drops to third place after book (58.2% of responses). In the post-test the cumulative first, second and third place order remained the same at Google, book and friend (72.1%, 51.8% and 43.6%), with journal coming in a close fourth with an improvement of 19.5%.

It is promising that the elevation of journal as a consultation point to fourth place, showing that students are beginning to understand its importance in university level discourse (21.9% in the pre-test to 41.4% in the post-test).

In the pre-test, an interesting pattern emerges for wikipedia which showed a jump in popularity when the cumulative results for first to third place were compared, however in the post-test it moves to sixth place (41.6% to 30.1%). Another notable point is the drop in encyclopaedia from 31.7 to 21.8 in the post-test.
In order to become familiar with a subject about which I know very little, first I consult:

<table>
<thead>
<tr>
<th></th>
<th>Percent 1&lt;sup&gt;st&lt;/sup&gt; choice</th>
<th>Cumulative percent 1&lt;sup&gt;st&lt;/sup&gt; and 2&lt;sup&gt;nd&lt;/sup&gt; choice Pre-test</th>
<th>Cumulative percent 1&lt;sup&gt;st&lt;/sup&gt;, 2&lt;sup&gt;nd&lt;/sup&gt; and 3&lt;sup&gt;rd&lt;/sup&gt; choice Pre-test</th>
<th>Percent 1&lt;sup&gt;st&lt;/sup&gt; choice</th>
<th>Cumulative percent 1&lt;sup&gt;st&lt;/sup&gt; and 2&lt;sup&gt;nd&lt;/sup&gt; choice Post-test</th>
<th>Cumulative percent 1&lt;sup&gt;st&lt;/sup&gt;, 2&lt;sup&gt;nd&lt;/sup&gt; and 3&lt;sup&gt;rd&lt;/sup&gt; choice Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
<td>35.0</td>
<td>62.2</td>
<td>74.8</td>
<td>42.5</td>
<td>63.4</td>
<td>72.1</td>
</tr>
<tr>
<td>Friend</td>
<td>34.4</td>
<td>47</td>
<td>58.2</td>
<td>18.0</td>
<td>29.0</td>
<td>43.6</td>
</tr>
<tr>
<td>Book</td>
<td>24.7</td>
<td>42.9</td>
<td>62.8</td>
<td>15.0</td>
<td>32.4</td>
<td>51.8</td>
</tr>
<tr>
<td>Database</td>
<td>12.5</td>
<td>23.7</td>
<td>36.1</td>
<td>7.3</td>
<td>20.2</td>
<td>36.2</td>
</tr>
<tr>
<td>Wikipedia</td>
<td>11.4</td>
<td>25.8</td>
<td>41.6</td>
<td>3.7</td>
<td>18.0</td>
<td>30.1</td>
</tr>
<tr>
<td>Encyclopaedia</td>
<td>10.6</td>
<td>16.9</td>
<td>31.7</td>
<td>2.1</td>
<td>9.3</td>
<td>21.8</td>
</tr>
<tr>
<td>Journal</td>
<td>9.4</td>
<td>15.9</td>
<td>21.9</td>
<td>11.3</td>
<td>26.8</td>
<td>41.4</td>
</tr>
<tr>
<td>Blog</td>
<td>9.2</td>
<td>10.1</td>
<td>12.3</td>
<td>0.4</td>
<td>1.7</td>
<td>.8</td>
</tr>
<tr>
<td>Other (family, lecturer, teacher, mentor, Library website, parent, mum)</td>
<td>.8</td>
<td>1</td>
<td>1.1</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**Mean – items by Pre-test and Post-test**

Note: the LOWER the mean the MORE important (because 1 = Most Important, 8 = Least)

For example, Journal ‘improved’ from 5.69 at Pre-test to 4.06 at the Post-test

<table>
<thead>
<tr>
<th></th>
<th>Q5jrn</th>
<th>Q5frnd</th>
<th>Q5encyc</th>
<th>Q5blog</th>
<th>Q5dbase</th>
<th>q5google</th>
<th>Q5book</th>
<th>Q5wikip</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Pre-test Mean</td>
<td>5.69</td>
<td>3.63</td>
<td>4.83</td>
<td>6.88</td>
<td>4.89</td>
<td>2.83</td>
<td>3.40</td>
<td>4.98</td>
</tr>
<tr>
<td>N</td>
<td>992</td>
<td>992</td>
<td>992</td>
<td>992</td>
<td>992</td>
<td>992</td>
<td>992</td>
<td>992</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>1.998</td>
<td>2.406</td>
<td>1.878</td>
<td>1.435</td>
<td>2.116</td>
<td>2.020</td>
<td>2.005</td>
<td>2.322</td>
</tr>
<tr>
<td>2 Post-test Mean</td>
<td>4.06</td>
<td>4.23</td>
<td>4.96</td>
<td>6.99</td>
<td>4.39</td>
<td>2.59</td>
<td>3.63</td>
<td>5.39</td>
</tr>
<tr>
<td>N</td>
<td>1075</td>
<td>1075</td>
<td>1075</td>
<td>1075</td>
<td>1075</td>
<td>1075</td>
<td>1075</td>
<td>1075</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>1.998</td>
<td>2.340</td>
<td>1.753</td>
<td>1.249</td>
<td>1.962</td>
<td>1.907</td>
<td>1.940</td>
<td>2.379</td>
</tr>
</tbody>
</table>
5.3 Library expectations

Q6. How do you expect to use the Library at La Trobe University? (Circle as many as apply)
   a. Borrow books and other resources
   b. Private study
   c. Socialise or meet people
   d. Use e-resources (online books, journals etc.)
   e. Print out materials
   f. Ask a librarian for help
   g. Use the computers
   h. Do group work or study

Theme: Library expectations

Purpose of question: Library and information literacy planning

Results and interpretation

In this question respondents were asked to circle as many options as they felt applied. To analyse this question the numbers circling each question were totalled. This provides information for the expectations of the entire cohort, and seems to indicate that the Library brand ‘books’ remains a strong theme amongst this cohort and age group. These results also have implications for the use of space in the Library buildings on all campuses, with high numbers indicating an expectation of private study and group work in the building and extremely few expecting a fully online library collection or service.

Since respondents could circle as many as applied, the answers to this question were scored as ‘yes’ I expect to or ‘no’ I do not expect to.

<table>
<thead>
<tr>
<th>How do you expect to use the Library at La Trobe University? (multiple selections)</th>
<th>Frequency 'I expect to' Pre-test</th>
<th>Percent Pre-test</th>
<th>Frequency 'I expect to' Post-test</th>
<th>Percent Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borrow books and other resources</td>
<td>948</td>
<td>94.0</td>
<td>685</td>
<td>63.5</td>
</tr>
<tr>
<td>Private study</td>
<td>859</td>
<td>85.9</td>
<td>797</td>
<td>73.9</td>
</tr>
<tr>
<td>Socialise</td>
<td>155</td>
<td>15.5</td>
<td>303</td>
<td>28.1</td>
</tr>
<tr>
<td>Use e resources</td>
<td>694</td>
<td>69.4</td>
<td>570</td>
<td>52.8</td>
</tr>
<tr>
<td>Print</td>
<td>712</td>
<td>71.2</td>
<td>649</td>
<td>60.1</td>
</tr>
<tr>
<td>Ask a librarian</td>
<td>535</td>
<td>53.5</td>
<td>254</td>
<td>23.5</td>
</tr>
<tr>
<td>Use computers</td>
<td>771</td>
<td>77.1</td>
<td>793</td>
<td>73.5</td>
</tr>
<tr>
<td>Do group work</td>
<td>850</td>
<td>85</td>
<td>911</td>
<td>84.4</td>
</tr>
<tr>
<td>Only expect to use the Library online</td>
<td>5</td>
<td>.5</td>
<td>16</td>
<td>1.5</td>
</tr>
<tr>
<td>Don’t expect to use the Library at all</td>
<td>2</td>
<td>.2</td>
<td>4</td>
<td>.4</td>
</tr>
</tbody>
</table>

Given the answers to this question, it seems respondents already have a wide variety of expectations of, and preconceptions about their University Library when they arrive on day one of semester, perhaps based on the way they used their library in their home town or at secondary school.
The focus of answers seemed to be on traditional library uses e.g. print book borrowing (94.8%), private study (85.9%), group study (85%), with very few expecting to have a virtual library service or collection. Notably only two of the one thousand respondents in the pre-test did not expect to use the Library at all. With only 15.5% indicating they expected to socialise in the Library, one can hypothesise that this use is not encouraged in secondary schools.

Somewhat surprisingly, only 69.4% expected to use electronic library resources, and again it may be that this cohort believes all necessary information is available for free via the internet, not realising that at university their access is provided by the Library. This is another area for further investigation.

While in the pre test students indicated book borrowing, private and group study as their key expectations, the post test showed some striking differences between respondents’ expectations and their actual use of library services and resources with a:

- 31% drop between expectations and use of borrowing services
- 12% drop between expectations and use of private study
- 13% rise in socialising
- 17% drop in the expectations versus use of electronic material
- 30% drop between those expecting to ask for help and those actually asking for help
5.4 Internet access and classes – analysis

These questions (7–9) were included in the pre-test only.

Q7. At my most recent educational experience, e.g. school, TAFE, college: (Circle only one answer)

a. I had classes on finding and using information
b. I did not have classes on finding and using information
c. Don’t know

Theme: Prior information seeking classes (pre-test only)

Purpose of question: Effect of prior classes on performance in the knowledge questions

Results and interpretation

More than half of the students in this cohort (59.8%) had library classes on finding and using information in their most recent educational institution. Those with no classes formed 28.5% of the total, with the remaining 10.7% unsure.

Later in this report, these two different groups e.g. those with no classes and those with classes, are compared to see how they fared in the ‘knowledge’ questions in the last half of the survey.

<table>
<thead>
<tr>
<th>At my most recent educational experience e.g. school, TAFE, college</th>
<th>Frequency Pre-test</th>
<th>Percent Pre-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had information seeking classes</td>
<td>598</td>
<td>59.8</td>
</tr>
<tr>
<td>Did not have information seeking classes</td>
<td>285</td>
<td>28.5</td>
</tr>
<tr>
<td>Did not know</td>
<td>107</td>
<td>10.7</td>
</tr>
<tr>
<td>Invalid</td>
<td>10</td>
<td>1.0</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Q8. At my most recent educational institution experience: (Circle only one answer)

a. I had access to internet computer facilities
b. I did not have access to internet computer facilities
c. Don’t know

Theme: Access to internet computer facilities (pre-test only)

Purpose of question: Effect of access to internet computer facilities on information seeking behaviour

Results and interpretation

The vast majority, 96.4%, had access to the internet at their most recent educational institution. This result is not surprising and accords well with the findings of other Australian surveys on internet access.
At my most recent educational institutional experience:

<table>
<thead>
<tr>
<th></th>
<th>Frequency Pre-test</th>
<th>Percent Pre-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>I had access to internet computer facilities</td>
<td>964</td>
<td>96.4</td>
</tr>
<tr>
<td>I did not have access to internet computer facilities</td>
<td>25</td>
<td>2.5</td>
</tr>
<tr>
<td>Did not know</td>
<td>7</td>
<td>.7</td>
</tr>
<tr>
<td>Invalid</td>
<td>4</td>
<td>.4</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Q9. At home currently: *(Circle only one answer)*

a I have internet computer access whenever I need to use it
b I have internet computer access but cannot use it often
c I do not have internet computer access
d Don’t know

Theme: Current computer access

Purpose of question: Effect of current internet computer access on information seeking behaviour

Results and interpretation

Of those responding to the survey over 89% had access to the internet whenever they needed it, with 4.1% having irregular or limited access at home.
5.5 Use of Library services

Questions 7-9 were included in the post-experience survey only

<table>
<thead>
<tr>
<th>Which of the following Library sources of help did you use this year?</th>
<th>Frequency Post-test</th>
<th>Percent Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Literacy modules</td>
<td>631</td>
<td>58.2</td>
</tr>
<tr>
<td>Other Library guides</td>
<td>98</td>
<td>9.1</td>
</tr>
<tr>
<td>Service desks</td>
<td>521</td>
<td>48.2</td>
</tr>
<tr>
<td>Other – please describe</td>
<td>10</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Of the 1083 responses received, 631 respondents indicated that they had used the Library Information Literacy modules. Considering this was the primary mode of information literacy instruction for this cohort, it is still only 60% of the total responses, and 40% of the entire enrolled cohort (1651 students).

Although there may be students who are already confident using the Library resources and do not feel they need the modules, there is still a large number to reach. Further investigation is required to improve the marketing of the modules for first year students in 2010.
Q8. If you used the Library Health Sciences Information Literacy Modules, which ones did you use, and how useful were they? Please CIRCLE to rate how useful each module was with 1 = MOST USEFUL etc

Can’t I just Google?
Introducing the Library
Finding items on a resource list
Referencing with APA style
Planning your search
Finding books, book chapters, reports or AV by topic
Finding journal articles by topic including peer-reviewed
Finding credible internet information
Finding media reports / newspaper articles
Finding health and social statistics

Theme: Use of Library services (post-test only)

Purpose of question: Information Literacy modules usefulness

Results and interpretation
In this question respondents were asked to rate each module from 1 to 4 with 1 being most useful to four being least useful, with an additional option ‘didn’t use’.

<table>
<thead>
<tr>
<th>Name of module</th>
<th>Most useful</th>
<th>Least useful</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Can’t I just Google</td>
<td>134</td>
<td>196</td>
</tr>
<tr>
<td></td>
<td>13.6</td>
<td>19.9</td>
</tr>
<tr>
<td>Introducing the Library</td>
<td>78</td>
<td>179</td>
</tr>
<tr>
<td></td>
<td>7.9</td>
<td>18.2</td>
</tr>
<tr>
<td>Finding items on a resource list</td>
<td>217</td>
<td>225</td>
</tr>
<tr>
<td></td>
<td>22.1</td>
<td>22.9</td>
</tr>
<tr>
<td>Referencing with APA style</td>
<td>498</td>
<td>209</td>
</tr>
<tr>
<td></td>
<td>50.5</td>
<td>21.2</td>
</tr>
<tr>
<td>Planning your search</td>
<td>77</td>
<td>178</td>
</tr>
<tr>
<td></td>
<td>7.9</td>
<td>18.2</td>
</tr>
<tr>
<td>Findings books, chapters, reports or AV by topic</td>
<td>228</td>
<td>238</td>
</tr>
<tr>
<td></td>
<td>23.1</td>
<td>24.2</td>
</tr>
<tr>
<td>Finding journal articles by topic including peer-reviewed</td>
<td>245</td>
<td>256</td>
</tr>
<tr>
<td></td>
<td>24.9</td>
<td>26.0</td>
</tr>
<tr>
<td>Finding credible internet information</td>
<td>226</td>
<td>255</td>
</tr>
<tr>
<td></td>
<td>23.0</td>
<td>25.9</td>
</tr>
<tr>
<td>Finding media reports / newspaper articles</td>
<td>195</td>
<td>274</td>
</tr>
<tr>
<td></td>
<td>19.8</td>
<td>27.9</td>
</tr>
<tr>
<td>Finding health and social statistics</td>
<td>180</td>
<td>224</td>
</tr>
<tr>
<td></td>
<td>18.3</td>
<td>22.8</td>
</tr>
</tbody>
</table>
An average of 984 of the 1083 respondents answered this question. An average of 333 respondents did not use the modules at all, the balance of 651 responded that they had used the modules, with an average of 33% rating the modules as most useful to useful (1-2 on the scale). With 431 respondents finding the modules useful, this is still only 25% of the entire enrolled cohort of first year students (1651), clearly there is further investigation required to improve efficiency and marketing of the modules.

On this four point scale 34% of respondents answered either three or four indicating towards the least useful end of the scale and another 34% who did not use the modules at all.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree or disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Total responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>I was able to find the Library Information Literacy modules in LMS in HLT1IPA</td>
<td>229</td>
<td>561</td>
<td>177</td>
<td>73</td>
<td>26</td>
<td>1066</td>
</tr>
<tr>
<td></td>
<td>21.5</td>
<td>52.6</td>
<td>16.6</td>
<td>6.8</td>
<td>2.4</td>
<td>100.0</td>
</tr>
<tr>
<td>I found it useful to discuss finding Library resources in HLT1IPA workshops</td>
<td>47</td>
<td>360</td>
<td>456</td>
<td>165</td>
<td>34</td>
<td>1062</td>
</tr>
<tr>
<td></td>
<td>4.4</td>
<td>33.9</td>
<td>42.9</td>
<td>15.5</td>
<td>3.2</td>
<td>100.0</td>
</tr>
<tr>
<td>I am able to navigate effectively within the Library Information Literacy modules</td>
<td>85</td>
<td>472</td>
<td>327</td>
<td>146</td>
<td>31</td>
<td>1061</td>
</tr>
<tr>
<td></td>
<td>8.0</td>
<td>44.5</td>
<td>30.8</td>
<td>13.8</td>
<td>2.9</td>
<td>100.0</td>
</tr>
<tr>
<td>I am able to effectively use the Library catalogue to find print materials</td>
<td>131</td>
<td>519</td>
<td>238</td>
<td>149</td>
<td>26</td>
<td>1063</td>
</tr>
<tr>
<td></td>
<td>12.3</td>
<td>48.8</td>
<td>22.4</td>
<td>14.0</td>
<td>2.4</td>
<td>100.0</td>
</tr>
<tr>
<td>I am able to effectively use the Library catalogue to find electronic materials</td>
<td>164</td>
<td>573</td>
<td>206</td>
<td>97</td>
<td>23</td>
<td>1063</td>
</tr>
<tr>
<td></td>
<td>15.4</td>
<td>53.9</td>
<td>19.4</td>
<td>9.1</td>
<td>2.2</td>
<td>100.0</td>
</tr>
<tr>
<td>I am able to effectively use the Library’s journal article databases</td>
<td>152</td>
<td>528</td>
<td>220</td>
<td>137</td>
<td>25</td>
<td>1062</td>
</tr>
<tr>
<td></td>
<td>14.3</td>
<td>49.7</td>
<td>20.7</td>
<td>12.9</td>
<td>2.4</td>
<td>100.0</td>
</tr>
<tr>
<td>I am confident in using the Library resources to find information for my university assignments</td>
<td>137</td>
<td>501</td>
<td>247</td>
<td>137</td>
<td>41</td>
<td>1063</td>
</tr>
<tr>
<td></td>
<td>12.9</td>
<td>47.1</td>
<td>23.2</td>
<td>12.9</td>
<td>3.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Theme: Effectiveness and confidence in the use of Library services (post-test only)

Purpose of question: Measuring student confidence levels

Results and interpretation

In this question respondents were asked to rate via a Likert Scale a range of statements designed to ascertain the student confidence and efficiency in accessing Library resources.
74% of respondents were able to find the Library Information Literacy modules in the student Learning Management System. This is a good outcome for the delivery of information literacy instruction to students, particularly as this is the first time the Library has collaborated with Faculty to embed information literacy instruction in to the student learning environment. This positive outcome is further supported by a 53% of respondents answering that they were able to effectively navigate within the modules, although there is clearly further work to be done to enhance and improve navigation within the modules.

Another positive outcome is the number of respondents who agreed and strongly agreed that they were able to find print (61%) and electronic (69%) materials via the Library catalogue with 64% confident in using the Library’s electronic databases.

Finally, on a confidence level, 60% of respondents agreed or strongly agreed that they felt confident in using the Library resources to find information for university assignments.
5.6 The ‘Knowledge’ questions and analysis

Questions 10 – 20 The ‘Knowledge’ questions

The questions relating to students’ knowledge, use of scholarly resources and perception of where to start can be divided as follows:

- scholarly information tools
- relevant resources to use
- best search strategies

There were eleven questions that were designed to test respondents’ knowledge and understanding of scholarly information seeking. Questions covered assessing the quality of an internet site, peer review, referencing, searching strategies and plagiarism. These questions test the knowledge and skills which correspond with the La Trobe University Library Information Literacy Policy and Framework\(^2\), and also the international development of graduate capabilities for lifelong learning.

For the purposes of effective analysis, this section groups the ‘knowledge’ questions by theme:

- **Choice of search tool**
  - Q10 knowledge of search tools
  - Q17 catalogue contents

- **Search for information on a topic (open enquiry) keyword choice, Boolean and fields**
  - Q11 knowledge of search strategy
  - Q12 knowledge of search strategy
  - Q15 searching the Library catalogue
  - Q16 Boolean operator AND

- **Elements of a citation recognition**
  - Q13 understanding citations
  - Q14 searching the Library catalogue

- **Referencing**
  - Q19 authoritative quality of information

- **Quality of information**
  - Q18 evaluating quality internet information
  - Q20 awareness of peer-reviewed journal articles

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The Knowledge Questions - Choice of search tool

- Q10 Knowledge of search tools
- Q17 Catalogue contents

Q10. If I want to find scholarly journal articles about the impact of global warming I will search: (Circle only one answer)

- a The Library catalogue
- b A database
- c Google
- d The journals in the Library
- e Other (please specify)……………………………………………………………………………
- f Don’t know

Theme: Knowledge of search tools

Purpose of question
Question 10 aimed to find out about students knowledge and awareness of different search tools and their choice of resource when the task is to find scholarly articles. Choice of search tool is an important first step in a search strategy and differs depending on the type of documents required.

Results and interpretation
While all choices listed will yield results, in an academic environment option b, a database, is considered to be the most efficient search tool for locating scholarly journal articles. In the pre-test, only 11.4% of respondents chose this answer, and in the post-test 25.2% of respondents selected the correct answer. Whilst this was a minor improvement on the pre-test, there is still 74.8% of the cohort that chose the incorrect answer. In the pre-test, an additional 3% of respondents circled more than one option and included b, whilst in the post-test 4% circled more than one option and included b.

In the pre-test, over a third of respondents (33.8%) selected Google, whilst in the post-test only 18.8% of respondents selected Google. 21% of respondents selected the Library catalogue as the correct answer in the pre-test, this improved slightly to 26.7%, while 15.3% selected the journals in the pre-test, and 17.7% in the post-test. The number of respondents who selected ‘don’t know’ reduced from 10.6% in the pre-test to 3.7% in the post-test which was encouraging. E-journals in the catalogue and journals on the shelf in the Library can both be browsed; however, the Library catalogue does not index journal articles so these options are not efficient methods of searching for scholarly articles.

<table>
<thead>
<tr>
<th>If I want to find scholarly journal articles about the impact of global warming I will search</th>
<th>Frequency Pre-test</th>
<th>Percent Pre-test</th>
<th>Frequency Post-test</th>
<th>Percent Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invalid</td>
<td>6</td>
<td>0.6</td>
<td>15</td>
<td>1.4</td>
</tr>
<tr>
<td>The Library catalogue</td>
<td>213</td>
<td>21.3</td>
<td>289</td>
<td>26.7</td>
</tr>
<tr>
<td>A database</td>
<td>114</td>
<td>11.4</td>
<td>273</td>
<td>25.2</td>
</tr>
<tr>
<td>Google</td>
<td>338</td>
<td>33.8</td>
<td>204</td>
<td>18.8</td>
</tr>
<tr>
<td>The journals in the Library</td>
<td>153</td>
<td>15.3</td>
<td>192</td>
<td>17.7</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>0.6</td>
<td>8</td>
<td>0.7</td>
</tr>
<tr>
<td>Don’t know</td>
<td>106</td>
<td>10.6</td>
<td>40</td>
<td>3.7</td>
</tr>
<tr>
<td>More than one option selected</td>
<td>64</td>
<td>6.4</td>
<td>62</td>
<td>5.8</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
<td>1083</td>
<td>100.0</td>
</tr>
</tbody>
</table>
These results show that the majority of students beginning first year Health Sciences are not familiar with the concept of using databases for finding scholarly journal articles. Although there was a moderate improvement in the post-test, there are still 809 respondents who would not use a database as a tool of first resort to find scholarly information.

**Q17. Some of the items that can be found in the Library catalogue include: (Circle as many as apply)**

- a. All the titles of the books available in the Library
- b. All the titles of the books available on the market
- c. All the titles of articles found in the journals available in the Library
- d. All the titles of journals available in the Library
- e. None of the above
- f. Don’t know

**Theme: Library catalogue contents**

**Purpose of question**
Do students know what types of searches would be possible and what content is available, in a library catalogue generally? Respondents were directed to circle as many as apply.

**Results and interpretation**

A and d are correct. The number of respondents answering the a d combination in the pre-test was 7.8%, the post-test showed only 7.2%. All responses which include a in the pre-test are 71.3% with 69.6% in the post-test, and d 59.1% in the pre-test, not much change with 61.5% in the post-test. Most respondents thought that a c and d were correct (39.8% with 43.3% in the post-test) which included the incorrect response of thinking that articles are listed in the catalogue. In fact c (articles) was included in 57.4% (with 61.3% in the post-test) of responses overall – so this was a common thought, and perhaps students do not realise that the databases, although available from the Library home page are not part of the catalogue. There was an increase of 4.9% (54) of respondents answering c, perhaps due to a new awareness of journal article availability. Respondents answering ‘don’t know’ in the pre-test were 18.5%, this reduced to 13.6% of the cohort in the post-test.

<table>
<thead>
<tr>
<th>Some of the items that can be found in the Library catalogue include:</th>
<th>Frequency Pre-test</th>
<th>Percent Pre-test</th>
<th>Frequency Post-test</th>
<th>Percent Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>All the titles of the books available in the Library (option a)</td>
<td>76</td>
<td>7.6</td>
<td>90</td>
<td>8.3</td>
</tr>
<tr>
<td>All the titles of books and journals in the Library (option a and d)</td>
<td>78</td>
<td>7.8</td>
<td>78</td>
<td>7.2</td>
</tr>
<tr>
<td>All the titles of books, articles and journals</td>
<td>398</td>
<td>39.8</td>
<td>469</td>
<td>43.3</td>
</tr>
<tr>
<td>All the titles of books available on the market</td>
<td>6</td>
<td>.6</td>
<td>15</td>
<td>1.4</td>
</tr>
<tr>
<td>All the titles of articles found in the journals available in the Library</td>
<td>17</td>
<td>1.7</td>
<td>71</td>
<td>6.6</td>
</tr>
<tr>
<td>All the titles of journals available in the Library (option d)</td>
<td>8</td>
<td>.8</td>
<td>40</td>
<td>3.7</td>
</tr>
<tr>
<td>All the titles of the books available in the Library (plus on the market, articles and journal titles)</td>
<td>170</td>
<td>17.0</td>
<td>130</td>
<td>12.0</td>
</tr>
<tr>
<td>None of the above</td>
<td>6</td>
<td>.6</td>
<td>9</td>
<td>.8</td>
</tr>
<tr>
<td>Don’t know</td>
<td>185</td>
<td>18.5</td>
<td>147</td>
<td>13.6</td>
</tr>
<tr>
<td>Invalid</td>
<td>56</td>
<td>5.6</td>
<td>34</td>
<td>3.1</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
<td>1083</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The Knowledge questions - Search for information on a topic (open enquiry) keyword choice, Boolean and fields

- Q11 knowledge of search strategy
- Q12 knowledge of search strategy
- Q15 searching the Library catalogue
- Q16 Boolean operator AND

Q11. You have used the words ‘business letters’ in a library catalogue search. No items are found by the computer. What do you conclude? (Circle only one answer)

- a. The Library does not have any items on this topic
- b. I have not used the right words
- c. All items on this topic are already on loan
- d. The system is down
- e. Other (please specify): …………………………………………………………………………….
- f. Don't know

Theme: Knowledge of search strategy

Purpose of question
The purpose of the question is to determine whether students understand the relationship between keyword choice and search results.

Results and interpretation
The majority of students selected the right answer in the pre-test (77.3%) and this further improved in the post-test to 81.7% (885), which indicates that entry level students have a good grasp of the influence of keyword selection on search results in this context. It may be that Google use has given this student cohort a high level of familiarity with how keywords function in the search strategy.

<table>
<thead>
<tr>
<th>You have used the words ‘business letters’ in a library catalogue search. No items are found, what do you conclude?</th>
<th>Frequency Pre-test</th>
<th>Percent Pre-test</th>
<th>Frequency Post-test</th>
<th>Percent Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invalid</td>
<td>15</td>
<td>1.5</td>
<td>11</td>
<td>1.0</td>
</tr>
<tr>
<td>The Library does not have any items on this topic</td>
<td>74</td>
<td>7.4</td>
<td>78</td>
<td>7.2</td>
</tr>
<tr>
<td>I have not used the right words (Correct Answer)</td>
<td>773</td>
<td>77.3</td>
<td>885</td>
<td>81.7</td>
</tr>
<tr>
<td>All items on this topic are already on loan</td>
<td>14</td>
<td>1.4</td>
<td>12</td>
<td>1.1</td>
</tr>
<tr>
<td>The system is down</td>
<td>14</td>
<td>1.4</td>
<td>10</td>
<td>.9</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>.6</td>
<td>4</td>
<td>.4</td>
</tr>
<tr>
<td>Don’t know</td>
<td>84</td>
<td>8.4</td>
<td>79</td>
<td>7.3</td>
</tr>
<tr>
<td>More than one option selected</td>
<td>20</td>
<td>2.0</td>
<td>4</td>
<td>.4</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
<td>1083</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Q12. You must use a psychology database to find information on: ‘The effect of family relations, on the academic results of primary school students’ (Circle only one answer)

Which combination of words will you use?

a. Family relations, academic results, primary school
b. Family relations, academic results
c. Effect, family relations, academic results
d. Effect, family relations, academic results, primary school
e. Other (please specify): …………………………………………………………………………
f. Don’t know

Theme: Knowledge of search strategy – concept identification – significant words

Purpose of question
The purpose of the question is to determine how students select concepts for a search strategy, and if they would include the most appropriate keywords.

Results and interpretation
32.3% of respondents selected the correct answer a, which means they were able to isolate the three key concepts in the question, this improved slightly in the post-test to 35.5%. However half (51.1% in the pre-test and 49.2% in the post-test) of the respondents selected c or d which includes the non-significant word ‘effect’ in the combination of words for the search strategy. Perhaps this is the influence of Google searching – use more search terms to narrow and refine results.

<table>
<thead>
<tr>
<th>You must use a psychology database to find information on: ‘The effect of family relations, on the academic results of primary school students’.</th>
<th>Frequency Pre-test</th>
<th>Percent Pre-test</th>
<th>Frequency Post-test</th>
<th>Percent Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invalid</td>
<td>25</td>
<td>2.5</td>
<td>19</td>
<td>1.8</td>
</tr>
<tr>
<td>Family relations, academic results, primary school (correct)</td>
<td>322</td>
<td>32.2</td>
<td>384</td>
<td>35.5</td>
</tr>
<tr>
<td>Family relations, academic results</td>
<td>79</td>
<td>7.9</td>
<td>88</td>
<td>8.1</td>
</tr>
<tr>
<td>Effect, family relations, academic results</td>
<td>65</td>
<td>6.5</td>
<td>65</td>
<td>6.2</td>
</tr>
<tr>
<td>Effect, family relations, academic results, primary school</td>
<td>446</td>
<td>44.6</td>
<td>465</td>
<td>42.9</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>.2</td>
<td>3</td>
<td>.3</td>
</tr>
<tr>
<td>Don’t know</td>
<td>52</td>
<td>5.2</td>
<td>56</td>
<td>5.2</td>
</tr>
<tr>
<td>More than one option selected</td>
<td>9</td>
<td>9.9</td>
<td>3</td>
<td>.3</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
<td>1083</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Q15. To find all the information about Tim Winton in the Library catalogue, I would do a search:  *(Circle only one answer)*  

a  By title  
b  By publisher  
c  By subject  
d  By author  
e  Other (please specify): .............................................................  
f  Don’t know  

Theme: Searching the Library Catalogue  

Purpose of question:  
This question tests the understanding of the search indexes, and the structure and content of the fields in a library catalogue or database.  

Results and interpretation  
The correct answer c was chosen by less than one fifth (18.6%) of respondents in the pre-test, with a minor improvement in the post-test to 24.1%. The greatest number of responses was option d by *author* of 60.8% in the pre-test, with 59.6% in the post-test. The respondents could not make the distinction between books by an author and books about an author, thereby making the connection between a subject being 'about' something. The mere mention of an author is potentially confusing.  

<table>
<thead>
<tr>
<th>To find all the information about Tim Winton in the Library catalogue, I would do a search:</th>
<th>Frequency Pre-test</th>
<th>Percent Pre-test</th>
<th>Frequency Post-test</th>
<th>Percent Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>By title</td>
<td>74</td>
<td>7.4</td>
<td>53</td>
<td>4.9</td>
</tr>
<tr>
<td>By Publisher</td>
<td>21</td>
<td>2.1</td>
<td>33</td>
<td>3.0</td>
</tr>
<tr>
<td>By Subject</td>
<td>186</td>
<td>18.6</td>
<td>261</td>
<td>24.1</td>
</tr>
<tr>
<td>By Author</td>
<td>608</td>
<td>60.8</td>
<td>645</td>
<td>59.6</td>
</tr>
<tr>
<td>Multiple selections</td>
<td>17</td>
<td>1.7</td>
<td>7</td>
<td>.7</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>.2</td>
<td>8</td>
<td>.7</td>
</tr>
<tr>
<td>Don't know</td>
<td>61</td>
<td>6.1</td>
<td>53</td>
<td>4.9</td>
</tr>
<tr>
<td>Invalid</td>
<td>31</td>
<td>3.1</td>
<td>23</td>
<td>2.1</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
<td>1083</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Q16. You have to write a paper on the ‘Treatment of depression’. Which search strategy will find the least number of items? (Circle only one answer)

a. depression and psychotherapy
b. depression or psychotherapy or antidepressants
c. depression and psychotherapy and antidepressants
d. depression
e. Other (please specify): ……………………………………………………………
f. Don’t know

Theme: Boolean operator AND

Purpose of question
To understand that the Boolean operator AND limits a search to results which include all the search terms.

Results and interpretation
In the pre-test, 38.6% of respondents chose the correct answer c (depression and psychotherapy and antidepressants), with a marked improvement in the post-test to 48.3%. Respondents selecting d (depression) came a close second with 30.1% in the pre-test and a marked decline to 20.8% in the post-test. Interestingly d was the option with one term. Perhaps the respondents choosing that option thought that entering one term only would retrieve fewer hits. The next best correct answer to c was a (depression and psychotherapy), which was chosen by 8.6% of respondents in the pre-test, this remained similar at 7.9% in the post-test.

Overall, answer b (depression or psychotherapy or antidepressants) which used ‘OR’, recorded the lowest response rate of 9.8%. This incorrect answer was chosen by 12.5% in the post-test, an increase of 37 respondents.

There is an indication of some level of Boolean understanding, as approximately half the respondents used the operator AND to limit the search. Respondents answering c (38.6% - 48.3% post-test) and a (8.6% - 7.9% post-test) included the operator AND, therefore a total of 47.2% in the pre-test and 56.2% in the post-test.

<table>
<thead>
<tr>
<th>You have to write a paper on the 'Treatment of depression'. Which search strategy will find the least number of items?</th>
<th>Frequency Pre-test</th>
<th>Percent Pre-test</th>
<th>Frequency Post-test</th>
<th>Percent Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression and psychotherapy</td>
<td>86</td>
<td>8.6</td>
<td>86</td>
<td>7.9</td>
</tr>
<tr>
<td>Depression or psychotherapy or antidepressants</td>
<td>98</td>
<td>9.8</td>
<td>135</td>
<td>12.5</td>
</tr>
<tr>
<td><strong>Depression and psychotherapy and antidepressants</strong></td>
<td><strong>386</strong></td>
<td><strong>38.6</strong></td>
<td><strong>523</strong></td>
<td><strong>48.3</strong></td>
</tr>
<tr>
<td>Depression</td>
<td>301</td>
<td>30.1</td>
<td>225</td>
<td>20.8</td>
</tr>
<tr>
<td>Multiple selections</td>
<td>2</td>
<td>.2</td>
<td>1</td>
<td>.1</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>.1</td>
<td>8</td>
<td>.7</td>
</tr>
<tr>
<td>Don’t know</td>
<td>80</td>
<td>8.0</td>
<td>79</td>
<td>7.3</td>
</tr>
<tr>
<td>Invalid</td>
<td>46</td>
<td>4.6</td>
<td>26</td>
<td>2.4</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
<td>1083</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The Knowledge questions - Elements of citation recognition

- Q13 understanding citations
- Q14 searching the Library catalogue

Q13. Which one of the following citations refers to a journal article? *(Circle only one answer)*

<table>
<thead>
<tr>
<th></th>
<th>Frequency Pre-test</th>
<th>Percent Pre-test</th>
<th>Frequency Post-test</th>
<th>Percent Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invalid</td>
<td>37</td>
<td>3.7</td>
<td>25</td>
<td>2.3</td>
</tr>
<tr>
<td>Book</td>
<td>139</td>
<td>13.9</td>
<td>75</td>
<td>6.9</td>
</tr>
<tr>
<td>Journal article</td>
<td>238</td>
<td>23.8</td>
<td>634</td>
<td>58.5</td>
</tr>
<tr>
<td>Chapter</td>
<td>245</td>
<td>24.5</td>
<td>269</td>
<td>24.8</td>
</tr>
<tr>
<td>Don’t know</td>
<td>340</td>
<td>34.0</td>
<td>80</td>
<td>7.4</td>
</tr>
<tr>
<td>More than one option selected</td>
<td>1</td>
<td>1.1</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100</td>
<td>1083</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Theme: Understanding citations

Purpose of question
The purpose of the question is to determine whether students are able to recognise a journal article citation. Understanding citations is a threshold skill that all students need in order to be able to assess the relevance of particular citations and know how to find them.

Results and interpretation
In the pre-test, only 23.8% of students selected the right answer b which means that the majority of students in the cohort would not be able to identify a journal article citation in a bibliography or reading list. In the post-test there was a marked improvement with 58.5% of respondents selecting the correct answer, even though the example given did not have the wording ‘Journal of …’. This is most likely due to the students’ exposure to journal article citations in their enquiry resource lists during first and second semester. However there are still 41.5% of respondents who did not answer correctly and have not yet grasped this fundamental skill for entry-level students in an academic environment. 24.8% of respondents chose option c, a similar result to the pre-test. There was a marked drop of respondents answering ‘don’t know’ in the pre-test from 34.0% to 7.4% which was encouraging.

As might be expected, the higher a student’s level of previous education, the more likely they are to correctly identify the journal article citation. Only 21% of respondents whose previous level of education was secondary school, were able to correctly identify the journal article citation while 47% of respondents whose previous level of education was university were able to correctly identify the journal article citation.
Q14. A friend told me that I should read an article by John Broome about the ethics of climate change in the June 2008 edition of Scientific American.

To check the availability of this article in the Library, I search in the catalogue under: (Circle only one answer)

- Scientific American
- John Broome
- The ethics of climate change
- Answers a b and c are correct
- Other
- Don't know

**Theme: Searching the Library catalogue**

**Purpose of question**
The purpose of the question is to determine whether students are able to recognise the elements of a journal article citation that is used to discover the journal in the library catalogue. The question also probes whether students understand that the Library catalogue lists journal titles rather than indexing the articles in journals. There was an error in this question, using the word ‘edition’ instead of issue. This may have affected the results, as respondents may have matched the word edition with a book title. As with question 13, this example did not use a title ‘Journal of …’

**Results and interpretation**
In the pre-test, only 13.4% of respondents selected the right answer a, this dropped slightly in the post-test to 11.1%, which indicates that the majority of students in the cohort do not understand the catalogue content and search function and therefore would find it difficult to locate the journal article in the Library. Respondents answering b dropped from 37.5% to 18.5%, but there was a marked increase in the number of respondents answering another incorrect option d – from 29.2% to 55.9%! This means in the post-test, even though the students have had journal article citations in their enquiry resource lists, and online research skills instruction, still 605 students have problems identifying that the Library catalogue is a resource that holds journal titles and not journal articles individually. This result could also be interpreted that the respondents answering option d were unsure of the correct answer, and option d looked like a reasonable option.

<table>
<thead>
<tr>
<th>A friend told me that I should read an article by John Broome about the ethics of climate change in the June 2008 edition of Scientific American.</th>
<th>Frequency</th>
<th>Percent</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>To check the availability of this article in the Library, I search in the catalogue under:</strong></td>
<td>Pre-test</td>
<td>Pre-test</td>
<td>Post-test</td>
<td>Post-test</td>
</tr>
<tr>
<td>Invalid</td>
<td>34</td>
<td>3.4</td>
<td>24</td>
<td>2.2</td>
</tr>
<tr>
<td><strong>Scientific American</strong></td>
<td>134</td>
<td>13.4</td>
<td>120</td>
<td>11.1</td>
</tr>
<tr>
<td>John Broome</td>
<td>375</td>
<td>37.5</td>
<td>200</td>
<td>18.5</td>
</tr>
<tr>
<td>The Ethics of climate change</td>
<td>90</td>
<td>9.0</td>
<td>76</td>
<td>7.0</td>
</tr>
<tr>
<td>Answers (a), (b), and (c) are correct</td>
<td>292</td>
<td>29.2</td>
<td>605</td>
<td>55.9</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>.1</td>
<td>1</td>
<td>.1</td>
</tr>
<tr>
<td>Don’t know</td>
<td>59</td>
<td>5.9</td>
<td>54</td>
<td>5.0</td>
</tr>
<tr>
<td>More than one option selected</td>
<td>15</td>
<td>10.5</td>
<td>3</td>
<td>.2</td>
</tr>
<tr>
<td>Total:</td>
<td>1000</td>
<td>100</td>
<td>1083</td>
<td>100.0</td>
</tr>
</tbody>
</table>
However of the students that could recognise a journal article citation correctly (238 respondents) only 52 could also identify the journal title as the correct citation element to use for a Library catalogue search. This means a very small minority (5.2%) of the total cohort can both recognise a journal article citation and know how to find it in the Library catalogue using the correct search strategy i.e. by journal title.

The large majority incorrectly believe that they can search the catalogue on any element of the citation (29%) or search for journal titles using article author (37.5%).

In a recent University of Melbourne study (Salisbury and Ellis, 2003), 22% of the study group had the skills to locate the journal article using the library catalogue. This corresponds closely with their 2002 study group when 22% were able to demonstrate that they would be able to find a journal using the library catalogue.
The Knowledge question - Referencing

- Q19 authoritative quality of information

Q19. You found magazine articles and web pages presenting different views on a current issue and you want to use this information to write your paper.

In which case(s) do you need to include a reference to the source of information? (Circle as many as apply)

- a When I copy word for word a paragraph from a magazine article
- b When I copy word for word a paragraph from a Web page
- c When I write in my own words what is being said in a magazine article
- d When I write in my own words what is being said in a web page
- e In none of the above cases
- f Don't know

Theme: Referencing

Purpose of question
Do students know when to include a reference to the information source?

Results and interpretation
Less than one third of respondents answered correctly a b c and d (28.3%) that in all cases listed, they would need to reference the source. There was a marked improvement in the post-test with 59.0% of respondents answering correctly. The next most common answer was a and b (25.4%) which focused only on the need to reference if one directly quoted 'word for word', this response dropped to 10.3% in the post-test.

These results show that respondents are aware of the need to reference but there was less awareness of the need to include the source when paraphrasing in the pre-test, but markedly more awareness in the post-test. This is reflected in the pre-test figures of the number of respondents including a (60.5%) or b (58.1%) the ‘word for word’ answers, as compared to c (40.2%) or d (37.5%) the ‘in my own words’ answers. The post-test results showed 75.0% of respondents included a and b the ‘word for word’ answers, compared to the number of respondents including the ‘in my own words’ answers c and d rising to 70.7% and 67.4%. This is an encouraging increase in the number of students now realising the importance of referencing text ‘in their own words’ as well.

There was also an encouraging reduction in the number of respondents answering ‘don’t know’ and ‘in none of the above cases’, plus invalid which reduced from 24.0%, to 11.6% in the post-test, i.e. 114 students.
You found magazine articles and web pages presenting different views on a current issue and you want to use this information to write your paper.

In which case(s) do you need to include a reference to the source of information? *Circle as many as apply*

<table>
<thead>
<tr>
<th>Source of Information</th>
<th>Frequency Pre-test</th>
<th>Percent Pre-test</th>
<th>Frequency Post-test</th>
<th>Percent Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word for word a paragraph from a magazine article</td>
<td>52</td>
<td>5.2</td>
<td>23</td>
<td>2.1</td>
</tr>
<tr>
<td>Combination of word for word a paragraph from a magazine article plus word for word web page</td>
<td>254</td>
<td>25.4</td>
<td>112</td>
<td>10.3</td>
</tr>
<tr>
<td>Students responding to all four correct options - word for word from a magazine article and web page</td>
<td>283</td>
<td>28.3</td>
<td>639</td>
<td>59.0</td>
</tr>
<tr>
<td>Word for word a paragraph from a web page</td>
<td>27</td>
<td>2.7</td>
<td>27</td>
<td>2.5</td>
</tr>
<tr>
<td>Write in my own words what is being said in a magazine article</td>
<td>38</td>
<td>3.8</td>
<td>37</td>
<td>3.4</td>
</tr>
<tr>
<td>Write in my own words what is being said in a magazine article and a web page</td>
<td>62</td>
<td>6.2</td>
<td>50</td>
<td>4.6</td>
</tr>
<tr>
<td>Write in my own words what is being said in a web page</td>
<td>21</td>
<td>2.1</td>
<td>17</td>
<td>1.6</td>
</tr>
<tr>
<td>Combinations containing any of the four correct elements</td>
<td>23</td>
<td>2.3</td>
<td>52</td>
<td>4.8</td>
</tr>
<tr>
<td>In none of the above cases</td>
<td>14</td>
<td>1.4</td>
<td>10</td>
<td>.9</td>
</tr>
<tr>
<td>Don’t know</td>
<td>151</td>
<td>15.1</td>
<td>83</td>
<td>7.7</td>
</tr>
<tr>
<td>Invalid</td>
<td>75</td>
<td>7.5</td>
<td>33</td>
<td>3.0</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
<td>1083</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The Knowledge questions – Quality of information

- Q18 evaluating the quality of internet information
- Q20 awareness of peer-reviewed journal articles

Q18. Among the characteristics that are used to evaluate the quality of an internet site I would check: (Circle as many as apply)

- a The date of publication is provided
- b The author is known in the field
- c Responsibility for the site is clearly indicated
- d The site is rapidly accessible
- e None of the above
- f Don’t know

Theme: Evaluating internet information

Purpose of question
What criteria are used to evaluate the quality of internet information?

Results and interpretation
Respondents were asked to circle as many options as applied. The best answer a,b and c was selected by 23.8% of respondents in the pre-test, this rose to 37.7% in the post-test. Although this figure seems low, this was actually a good result, particularly as the respondents had to select the three correct elements.

The next highest response was a combination a, b, c and d which had the added element ‘the site is rapidly accessible’. It could be argued that this is also a characteristic of a good quality site, as the question asked to indicate elements of quality (and not particularly credible qualities).

Any response including a or b or c totaled 73.9% rising to 87.9% in the post-test (even if it included other answers and did not include all of a, b and c). The results show some indication of awareness of relevant criteria, in that less than one third of responses included the best answer, and the relevant criteria are included in almost three quarters of responses, and improving as shown in the post-test results.

There is indication of some confusion showed by mixed responses and the 16.5% of respondents who ‘did not know’. However, the number of respondents who ‘did not know’ dropped in the post-test to 8.6%, which is encouraging.

Adding the number of respondents who answered ‘don’t know’ or were invalid, the figures again showed improvement with 23% (230) in the pre-test dropping to 9.0% (97) in the post-test – therefore, 133 respondents could now answer some of the correct elements in this question.
Among the characteristics that are used to evaluate the quality of an internet site I would check:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Frequency Pre-test</th>
<th>Percent Pre-test</th>
<th>Frequency Post-test</th>
<th>Percent Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>The date of publication is provided</td>
<td>96</td>
<td>9.6</td>
<td>66</td>
<td>6.1</td>
</tr>
<tr>
<td>The date of publication is provided (plus author, responsibility and accessibility)</td>
<td>265</td>
<td>26.5</td>
<td>317</td>
<td>29.2</td>
</tr>
<tr>
<td>Date of publication, author and responsibility</td>
<td>238</td>
<td>23.8</td>
<td>408</td>
<td>37.7</td>
</tr>
<tr>
<td>The author is known in the field</td>
<td>55</td>
<td>5.5</td>
<td>60</td>
<td>5.5</td>
</tr>
<tr>
<td>The author is known in the field (plus responsibility and accessibility)</td>
<td>30</td>
<td>3.0</td>
<td>26</td>
<td>2.4</td>
</tr>
<tr>
<td>Responsibility for the site is clearly indicated</td>
<td>52</td>
<td>5.2</td>
<td>72</td>
<td>6.6</td>
</tr>
<tr>
<td>Responsibility for the site is clearly indicated (plus accessibility)</td>
<td>3</td>
<td>.3</td>
<td>2</td>
<td>.2</td>
</tr>
<tr>
<td>The site is rapidly accessible</td>
<td>15</td>
<td>1.5</td>
<td>18</td>
<td>1.7</td>
</tr>
<tr>
<td>None of the above</td>
<td>16</td>
<td>1.6</td>
<td>17</td>
<td>1.6</td>
</tr>
<tr>
<td>Don’t know</td>
<td>165</td>
<td>16.5</td>
<td>71</td>
<td>6.6</td>
</tr>
<tr>
<td>Invalid</td>
<td>65</td>
<td>6.5</td>
<td>26</td>
<td>2.4</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
<td>1083</td>
<td>100.0</td>
</tr>
</tbody>
</table>
### Theme: Scholarly journals

**Purpose of question**
Is there an awareness of what a peer-reviewed scholarly journal article might mean?

**Results and interpretation**
Respondents were asked to circle as many as applied. In the pre-test, the highest percentage of respondents (45.2%) answered ‘don’t know’. There was a marked improvement in the post-test, with the number of students answering ‘don’t know’ dropping to 22.3%. The correct answer was b c and d which was given by only 4.4% of respondents in the pre-test, improving to 14.6% in the post-test.

Any responses that included some of the correct answers were: b (23.7% - 45.7% in the post-test), c (17.2% - 33.1% in the post-test), and d (21% - 53.8% in the post-test).

<table>
<thead>
<tr>
<th>Which of the following best describe(s) articles published in a peer-reviewed scholarly journal?</th>
<th>Frequency Pre-test</th>
<th>Percent Pre-test</th>
<th>Frequency Post-test</th>
<th>Percent Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information is written for the general public</td>
<td>74</td>
<td>7.4</td>
<td>34</td>
<td>3.1</td>
</tr>
<tr>
<td>Information is written for the general public plus 1-3 correct elements</td>
<td>138</td>
<td>13.8</td>
<td>201</td>
<td>18.5</td>
</tr>
<tr>
<td>Includes a list of references</td>
<td>48</td>
<td>4.8</td>
<td>51</td>
<td>4.7</td>
</tr>
<tr>
<td>Includes a list of references, the research method described, and evaluated by an editorial board</td>
<td>45</td>
<td>4.5</td>
<td>158</td>
<td>14.6</td>
</tr>
<tr>
<td>Combination of 1-3 of the correct elements</td>
<td>39</td>
<td>3.9</td>
<td>126</td>
<td>11.6</td>
</tr>
<tr>
<td>Research method used is described</td>
<td>29</td>
<td>2.9</td>
<td>19</td>
<td>1.8</td>
</tr>
<tr>
<td>Has been evaluated by an editorial board</td>
<td>72</td>
<td>7.2</td>
<td>188</td>
<td>17.4</td>
</tr>
<tr>
<td>None of the above</td>
<td>12</td>
<td>1.2</td>
<td>16</td>
<td>1.5</td>
</tr>
<tr>
<td>Don’t know</td>
<td>452</td>
<td>45.2</td>
<td>241</td>
<td>22.3</td>
</tr>
<tr>
<td>Invalid</td>
<td>91</td>
<td>9.1</td>
<td>49</td>
<td>4.5</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>100.0</td>
<td>1083</td>
<td>100.0</td>
</tr>
</tbody>
</table>
5.6.1 Respondent’s overall score

In the pre-test, more than half the knowledge questions were left blank (e.g. answers may not be wrong, but students may have given up or run out of time). Each individual was given a statistical ‘score’ based on their correct answers to the eleven knowledge questions.

In the pre-test, the scores revealed that only 8 respondents scored more than 7, whilst in the post-test 36 respondents scored more than 7, with 1 student achieving a perfect score of 11.

In the pre-test, 93.1% had less than 50% correct, this improved to 75.4% in the post-test.

An analysis of respondents scoring more than 50% was encouraging with 24.7% at this level in the post-test, an improvement from 6.7% in the pre-test.

Further analysis showed that 45.3% of the cohort only answered 0 – 2 of the 11 knowledge questions correctly in the pre-test, this improved to 21.5% scoring so low in the post-test.

<table>
<thead>
<tr>
<th>Respondents scoring</th>
<th>Pre-experience</th>
<th>Post-experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>more than 7</td>
<td>8</td>
<td>36</td>
</tr>
<tr>
<td>less than 50% correct</td>
<td>93%</td>
<td>75%</td>
</tr>
<tr>
<td>more than 50% correct</td>
<td>7%</td>
<td>25%</td>
</tr>
</tbody>
</table>
## Scores by pre and post-test

<table>
<thead>
<tr>
<th>Score</th>
<th>Count</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>% within Pre-Post</th>
<th>% within Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>55</td>
<td>42</td>
<td></td>
<td>5.5%</td>
<td>3.9%</td>
</tr>
<tr>
<td>1</td>
<td>161</td>
<td>74</td>
<td></td>
<td>16.1%</td>
<td>6.8%</td>
</tr>
<tr>
<td>2</td>
<td>237</td>
<td>117</td>
<td></td>
<td>23.7%</td>
<td>10.8%</td>
</tr>
<tr>
<td>3</td>
<td>228</td>
<td>192</td>
<td></td>
<td>22.8%</td>
<td>17.7%</td>
</tr>
<tr>
<td>4</td>
<td>188</td>
<td>210</td>
<td></td>
<td>18.8%</td>
<td>19.4%</td>
</tr>
<tr>
<td>5</td>
<td>64</td>
<td>182</td>
<td></td>
<td>6.4%</td>
<td>16.8%</td>
</tr>
<tr>
<td>6</td>
<td>44</td>
<td>147</td>
<td></td>
<td>4.4%</td>
<td>13.6%</td>
</tr>
<tr>
<td>7</td>
<td>15</td>
<td>83</td>
<td></td>
<td>1.5%</td>
<td>7.7%</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>30</td>
<td></td>
<td>.8%</td>
<td>2.8%</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>5</td>
<td></td>
<td>.0%</td>
<td>.5%</td>
</tr>
<tr>
<td>11</td>
<td>0</td>
<td>1</td>
<td></td>
<td>.0%</td>
<td>.1%</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>1083</td>
<td></td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
5.6.2 T-Test – Score by Pre-test and Post-test

This shows the mean score significantly higher at Time 2 (post-test) than at Time 1 (pre-test) but still quite low with a slight improvement in score from 2.8240 to 4.0563 in the post-test - 4 out of a possible score of 11 in the ‘knowledge questions’.

<table>
<thead>
<tr>
<th>Group Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Post Test</td>
</tr>
<tr>
<td>Score</td>
</tr>
<tr>
<td>Score</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Samples Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levene's Test for Equality of Variances</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>F</td>
</tr>
<tr>
<td>Score Equal variances assumed</td>
</tr>
<tr>
<td>Score Equal variances not assumed</td>
</tr>
</tbody>
</table>
Assigning the respondents ‘scores’ on the eleven knowledge questions (seven multiple choice and four ‘circle as many as apply’) provided a new dimension of measurement of entry level skills, enhancing the La Trobe version of the Mittemeyer survey. Cross tabulations of the respondent scores and campus, health discipline and educational attainment, provided a better understanding of the differences in entry level information seeking skills and knowledge within these subgroups.

5.6.2 Score by Campus, Health Sciences discipline and educational attainment (pre-test to ascertain entry level skills)

An analysis of the respondents’ scores by campus found that there were significant differences between the Albury Wodonga and Bendigo mean scores (sig. p=.043)

<table>
<thead>
<tr>
<th>Campus</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AW</td>
<td>2.4493</td>
<td>69</td>
<td>1.52948</td>
</tr>
<tr>
<td>Bendigo</td>
<td>3.0895</td>
<td>190</td>
<td>1.64828</td>
</tr>
<tr>
<td>Bundoora</td>
<td>2.8834</td>
<td>669</td>
<td>1.59758</td>
</tr>
<tr>
<td>Mildura</td>
<td>2.5600</td>
<td>25</td>
<td>1.15758</td>
</tr>
<tr>
<td>Shepparton</td>
<td>2.6957</td>
<td>23</td>
<td>1.49042</td>
</tr>
<tr>
<td>Total</td>
<td>2.8801</td>
<td>976</td>
<td>1.59582</td>
</tr>
</tbody>
</table>

- The mean differences are significant at the 0.05 level
- The Mildura and Shepparton campuses had very small numbers of respondents in the survey results, and conclusions were not extracted.

Respondents who had university education scored significantly better than both ‘other’ and the ‘secondary school’ group. A cross tabulation of the respondents’ scores by educational attainment found that there were significant differences (at the 95% confidence level), between the secondary school (mean score= 2.78) and the university (mean score= 3.88) cohorts, and secondary school and “other” (mean score = 3.06) groups. It is worth noting that only 67 students had university graduate status, while the “other” group (81 respondents) were mostly those with a TAFE certificate.

<table>
<thead>
<tr>
<th>Educ Level</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary school</td>
<td>2.7821</td>
<td>826</td>
<td>1.59042</td>
</tr>
<tr>
<td>University</td>
<td>3.8806</td>
<td>67</td>
<td>1.58135</td>
</tr>
<tr>
<td>Other</td>
<td>3.0617</td>
<td>81</td>
<td>1.36332</td>
</tr>
<tr>
<td>Total</td>
<td>2.8809</td>
<td>974</td>
<td>1.59592</td>
</tr>
</tbody>
</table>

Cross tabulation data also showed that respondents from some of the Health Sciences disciplines performed significantly better (at the 95% probability level), attaining higher information literacy entry scores, than their counterparts in other disciplines.
## Mean Score * HS Discipline

<table>
<thead>
<tr>
<th>HS Discipline</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Info</td>
<td>2.7692</td>
<td>39</td>
<td>1.49493</td>
</tr>
<tr>
<td>Nursing</td>
<td>2.6943</td>
<td>314</td>
<td>1.49188</td>
</tr>
<tr>
<td>Occupational Therapy</td>
<td>2.8750</td>
<td>96</td>
<td>1.32387</td>
</tr>
<tr>
<td>Orthoptics</td>
<td>3.2955</td>
<td>44</td>
<td>1.45601</td>
</tr>
<tr>
<td>Physiotherapy</td>
<td>3.5109</td>
<td>92</td>
<td>1.75095</td>
</tr>
<tr>
<td>Podiatry</td>
<td>2.9250</td>
<td>40</td>
<td>1.52564</td>
</tr>
<tr>
<td>Prosthetics &amp; Orthotics</td>
<td>4.2105</td>
<td>19</td>
<td>1.75052</td>
</tr>
<tr>
<td>Public Health</td>
<td>2.9032</td>
<td>31</td>
<td>1.75793</td>
</tr>
<tr>
<td>Social Work</td>
<td>2.5250</td>
<td>80</td>
<td>1.63021</td>
</tr>
<tr>
<td>Speech Path</td>
<td>3.2933</td>
<td>75</td>
<td>1.62558</td>
</tr>
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### Significant differences in scores for the groups are shown with black squares

- Physiotherapy students (mean score = 3.51) performed better than Nursing (mean score = 2.69), Social Work (mean score = 2.52) and ‘other’ students.
- Prosthetics and Orthotics (mean score = 4.21) performed better than Nursing (mean score = 2.69), Occupational Therapy (mean score = 2.87) Social Work (mean score = 2.52) and ‘other’ students.
However these choices indicate association between ‘library’ and scholarly information combined with the correct answer mean 48% of entry-level students connect scholarly information with the library.

### Multiple Comparisons: Score by Campus

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* The mean difference is significant at the 0.05 level.

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* The mean difference is significant at the 0.05 level.
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* The mean difference is significant at the 0.05 level.
6. Discussion

The students in the Health Sciences common first year were administered a pre and a post ‘test’ of their information literacy skills upon entry into their course in late February and near the end of their second semester, in September of the same year. This test schedule allowed the researchers to assess and then track the information literacy skills attainment of the cohort.

The pre and the post test were very similar; each with 20 questions (4 demographic questions; 5 questions on the use of Library resources/assistance; and 11 questions on the discovery and use of scholarly materials). In addition the pre-test and post test had nearly the same number of respondents, 1000 versus 1083. However the home campus response rates varied between the two surveys, with Bundoora rising from 69.1% to 76.6% of the total. In contrast all the other campuses had a drop in response rates, with Bendigo dropping 3.5%, and AW dropping 2.5%.

The students were introduced to Library skills during first semester via online tutorials, and a May quiz, which allowed them three attempts to answer the questions. Initially, the quiz seemed to show students skill rates developing rapidly as the following table illustrates.

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<th>Question category</th>
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<td>Finding items on a resource list</td>
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<tr>
<td>APA Referencing</td>
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</tr>
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<td>Planning a search</td>
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<tr>
<td>Internet information</td>
<td>90% correct</td>
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<tr>
<td>Finding peer-reviewed journal articles</td>
<td>79% correct</td>
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Students improved significantly between the pre-test and the quiz, especially as measured by questions 13, 14, 18 and 20. However, as a student had three chances to do the quiz and improve their scores, the improvement may be linked to ‘surface learning’ i.e. a superficial retention for examinations, rather than long-term knowledge and understanding that is expected by the time students reach proficient level in their final year.

The post test results seems to support this idea, there was a sharp drop in student correct answers from the quiz results in May to the post test answers in September. Overall, student scores showed only a minor improvement from a mean of 2.8240 in the pre test to 4.0563 in the post test (out of a possible score of eleven).

Respondents also had difficulties in understanding the scholarly journal literature, a prominent and new resource type for university study. Some specific examples include:

- Q10 on searching for scholarly information: only 11.4% of respondents in the pretest were correct, compared to 25.2% in the post test. This means that at the end of first year, 75% of students were unclear about the existence or use of scholarly databases.
- Q13 on journal article citation: results improved overall from 23% correct in the pre test to 58% correct in the post test
- Q14 on elements of a journal citation to search: student results fell by 2% from 13% in the pretest to 11% in the post test.

Encouragingly the post test had a sharp drop in the numbers and percent of ‘don’t know’ answers when compared to the pre test.
Student Comments: Students were invited to comment at the end of most questions, and at the end of the questionnaire. The following selected comments will be useful to feed into and inform the recommendations.

Question 5 – To become familiar with a subject about which I know very little, first I consult:

- “I know I need to use journals more except I don’t know how to search for them”
- “Hard to find relevant journals”

Question 6 – How do you use the Library at La Trobe University?

- “Too complicated”
- “Too hard to use”
- “Still not sure how to find books, journals”
- “Too hard to locate things & don’t know how to use website”

Question 8 – If you used the Library Health Sciences Information Literacy Modules, which ones did you use, and how useful were they?

- “Difficult to access/ I find myself searching for it all the time/ too confusing”
- “I find myself attempting to browse but it’s never useful info. I don’t have the time to invest, more wasted time. Hours go by just trying to find useful things”.
- “Modules I did use were extremely helpful, easy to follow, and really helped my research techniques. Fantastic. It would be good if there was more info about them and they were easier to find so I could have utilized them earlier”.
- “It was very informative and I only didn’t use other modules because I knew previously how to do those searches”.

Knowledge questions

- “System is too complicated”
- “No idea what peer-reviewed means”

Invited comments at the end

- “The library can really be complicated, eg. database and catalogue”
- “Finding databases and journals is too complex and difficult”
- “I can find searching for topics and referencing very complex therefore more guidance or a better page set up would be useful”
- “Library skills need to be stressed more because I didn’t listen at the start of the year!”
- “Sometimes find it difficult to know which database to use to research info on a general topic”
- “I find the 3 hr reserve section incredibly useful and can always find the book I need”
- “I found the literacy modules very helpful but only grasped a basic knowledge of how to search for certain things, so I’m still not very confident in the library”
- “The modules were very informative and clear which helped me facilitate the process of searching out certain information. However, feel that approaching the research help desk was more direct and easier”
- “You guys do a great job!”
- “I don’t know how to use the library but it’s not your fault, you have provided numerous opportunities”
- “More info on LMS for referencing and how to find journals”
- “I think it would be handy to make workshops available for first years to teach us and so we can ask questions then”
- “The library has good material but further knowledge to find the material needs to be shown to everyone”
7. Conclusion

This study demonstrates the need for a continual reinforcement of information literacy skills throughout the Health Sciences course from first year onwards, in order to promote a deep learning of the scholarly information seeking process, as envisaged by the University’s Graduate Capabilities statements. The study provides rich data on which information literacy skills instruction can be tailored to student need, from entry level to setting students on a learning continuum so they are able to develop foundation skills early, and progress to a proficient level of skills by their final year.

8. Recommendations

- Review the Information Literacy modules to enhance and improve instruction - Question 7
- Market the Information Literacy modules more effectively to the first year Health Sciences cohort in 2010 – Question 7
- Investigate enhancing pathways from the Library web page to ensure there is efficient and effective access to the scholarly databases – Question 7
- Review all pre and post-test results by discipline in consultation with relevant faculty librarians and academic staff to target areas of need and tailor information literacy instruction to fill these gaps
- Plan information literacy programs for this cohort in second year to fill the skill gaps identified in the survey
- Track the progression of information literacy skill development in this cohort by conducting another survey in October 2010 and beyond:
  - to ensure areas of need are identified and addressed
  - to track the deep learning of these skills
  - to track students in targeted groups e.g. disciplines or age
- Investigate a method of measuring improvements in Library support for the first year cohort in 2010 (i.e. improvements in the modules, marketing Library support at lectures and Library Discussion Boards)

9. References

ENIL Questionnaire on information competencies, ENIL (European Network on Information Literacy). [http://www2.ceris.cnr.it/Basili/EnIL/English_questionnaire.html](http://www2.ceris.cnr.it/Basili/EnIL/English_questionnaire.html)


10. Acknowledgements

Library Health Sciences Evaluation Working Group members:
Jenny Corbin (Faculty Librarian, Health Sciences and Co-ordinator of the Working Group), Eva Fisch (Collection Development Manager), Fiona Salisbury (Learning and Research Services Manager), Sharon Karasmanis (Health Sciences Librarian & Team Leader), Claire Brooks (Educational Design Coordinator), Chris Wanklyn (Faculty Librarian, Health Sciences)

Health Sciences Faculty Librarians at all campuses

Staff within the Faculty of Health Sciences, in particular Kerry Fitzmaurice and Matthew Oates

CTLC (Curriculum Teaching & Learning Centre).

11. Appendix 1 – Library Survey
Library Survey – Semester 2, 2009

This survey is not a test, but part of a Library project to determine how to improve its services. Even though you may have completed a similar survey in semester one, your participation in this follow up survey will be very valuable to the project.

Your responses are anonymous and we will be looking at the results of the group not individuals. So it is important to answer all questions honestly and without asking anyone else. If you don’t know the answer, circle Don’t know. Your participation is voluntary. If you choose not to answer this survey there is no penalty.

Confidentiality: Under no circumstances will individual student responses be shown to lecturers or other University authorities. Your answers will be combined with those of other students and used by the University Library to find out about the information skills of whole groups of students.

There are 20 questions: please follow instructions for each question as they are different!

1. Age group: CIRCLE only ONE answer
   a  16-18
   b  19-21
   c  22-30
   d  31-40
   e  40+

2. Highest level of education completed: CIRCLE only ONE answer
   a  Secondary School
   b  University
   c  Other (please specify) .................................................................

3. Health sciences discipline area in which you are enrolled: CIRCLE only ONE answer
   a  Health Information Management
   b  Nursing and Midwifery
   c  Occupational Therapy
   d  Orthoptics
   e  Physiotherapy
   f  Podiatry
   g  Prosthetics and Orthotics
   h  Public Health
   i  Social Work / Human Services
   j  Speech Pathology
   k  Other (please specify) .................................................................
4. Which campus do you attend? *CIRCLE only ONE answer*

a  Albury/Wodonga  
b  Bendigo  
c  Bundoora  
d  Mildura  
e  Shepparton  

5. In order to become familiar with a subject about which I know very little, first I consult:

*Please number in order of importance  1 = most important … 8 = least important:*

___  A journal  
___  Ask a friend  
___  An encyclopaedia  
___  A blog  
___  A database  
___  Google  
___  A book  
___  Wikipedia  
___  Other (please specify) ……………………………………

6. How do you use the Library at La Trobe University? *CIRCLE as MANY as apply:*

a  Borrow books and other resources  
b  Private study  
c  Socialise or meet people  
d  Use e-resources (online books, journals etc)  
e  Print out materials  
f  Ask a librarian for help  
g  Use the computers  
h  Do group work  
i  I only use the library on the web  
j  I don’t use any library services at all  
k  Comments …………………………………………………………………………………………………………………
7. **Which of the following Library sources of help or assistance did you use this year? CIRCLE as MANY as apply:**

a. Library Health Sciences Information Literacy Modules

b. Other Library guides .................................................................

c. Service desks e.g. Research Help Desk, Information Desk, Inquiry Desk

d. Other - please describe .................................................................

8. **If you used the Library Health Sciences Information Literacy Modules, which ones did you use, and how useful were they?**

Please **CIRCLE** to rate how useful each module was with **1 = MOST USEFUL** etc

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Comments Welcome ........................................................................................................

.................................................................................................................................
9. Circle how much the following statements describe you (Strongly agree … strongly disagree)

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</tr>
<tr>
<td>I am able to effectively use the Library's journal article databases</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am confident in using the Library resources to find information for my university assignments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. If I want to find scholarly journal articles about the impact of global warming I will search in: **CIRCLE only ONE answer**

   a. The Library catalogue
   b. A database
   c. Google
   d. The journals in the Library
   e. Other (please specify)....................................................................................................................
   f. Don't know
11. You have used the words ‘business letters’ in a library catalogue search. No items are found by the computer. What do you conclude? **CIRCLE only ONE answer**

a  The Library does not have any items on this topic

b  I have not used the right words

c  All items on this topic are already on loan

d  The system is down

e  Other (please specify): ..........................................................

f  Don’t know

12. You must use a psychology database to find information on:
‘The effect of family relations, on the academic results of primary school students’
**CIRCLE only ONE answer**

Which combination of words will you use?

a  Family relations, academic results, primary school

b  Family relations, academic results

c  Effect, family relations, academic results

d  Effect, family relations, academic results, primary school

e  Other (please specify): ..........................................................

f  Don’t know

13. Which one of the following citations refers to a journal article? **CIRCLE only ONE answer**


f  Don’t know
14. A friend told me that I should read an article by John Broome about the ethics of climate change in the June 2008 edition of Scientific American.

To check the availability of this article in the Library, I search in the catalogue under:

**CIRCLE only ONE answer**

a. Scientific American  
b. John Broome  
c. The Ethics of climate change  
d. Answers (a), (b), and (c) are correct  
e. Other (please specify):  
f. Don’t know

15. To find all the information about Tim Winton in the Library catalogue, I would do a search:

**CIRCLE only ONE answer**

a. By title  
b. By publisher  
c. By subject  
d. By author  
e. Other (please specify): ……………………………………………………………………………………………  
f. Don’t know

16. You have to write a paper on the ‘Treatment of depression’. Which search strategy will find the least number of items?

**CIRCLE only ONE answer**

a. depression and psychotherapy  
b. depression or psychotherapy or antidepressants  
c. depression and psychotherapy and antidepressants  
d. depression  
e. Other (please specify): ……………………………………………………………………………………………  
f. Don’t know
17. Some of the items that can be found in the Library catalogue include:  

**CIRCLE as MANY as apply**

- a  All the titles of the books available in the Library
- b  All the titles of the books available on the market
- c  All the titles of articles found in the journals available in the Library
- d  All the titles of journals available in the Library
- e  None of the above
- f  Don’t know

18. Among the characteristics that are used to evaluate the quality of an internet site I would check:  

**CIRCLE as MANY as apply**

- a  The date of publication is provided
- b  The author is known in the field
- c  Responsibility for the site is clearly indicated
- d  The site is rapidly accessible
- e  None of the above
- f  Don’t know

19. You found magazine articles and web pages presenting different views on a current issue and you want to use this information to write your paper.  

**CIRCLE as MANY as apply**

In which case(s) do you need to include a reference to the source of information?

- a  When I copy word for word a paragraph from a magazine article
- b  When I copy word for word a paragraph from a Web page
- c  When I write in my own words what is being said in a magazine article
- d  When I write in my own words what is being said in a web page
- e  In none of the above cases
- f  Don’t know
20. Which of the following best describe(s) articles published in a peer-reviewed scholarly journal? **CIRCLE as MANY as apply**

a. The information is written for the general public
b. It includes a list of references
c. The research method used is described
d. It has been evaluated by an editorial board
e. None of the above
f. Don’t know

_________________________________________________________________________

We thank you very much for your participation - contact: library@latrobe.edu.au

Your comments are most welcome: ………………………………………………………………
……………………………………………………………………………………………………
……………………………………………………………………………………………………

Please return the survey to your campus library or hand to your facilitator by 18 Sept 2009.

Appendix 10 – Quiz results report
LMS Quiz Results Report

Health Sciences First Year Information Literacy Program

4 December 2009

Fiona Salisbury
Jenny Corbin

On behalf of the Library Health Sciences Evaluation Working Group
Jenny Corbin, Eva Fisch, Sharon Karasmanis, Fiona Salisbury, Chris Wanklyn, Claire Brooks
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Appendix 1 – All questions, % answering correctly graph

Appendix 2 – All questions, question attempts graph

Appendix 3 – Quiz questions for 5% assessment in HLT1IPA
1. Introduction

The quiz was one of the key elements within the overall information literacy program in the HLT11PA subject of the Health Sciences CFY (Common First Year) 2009. The quiz questions were designed to assess and reinforce skills and knowledge required for the two research tasks embedded in the curriculum for the unit and also reflected the content and activities in the online information literacy modules. Students completed the quiz in week 9-10 of the semester so it represents a mid-point check of skill development. Together with the pre and post-test survey results, the results of the quiz results indicate students’ progressive development of foundation skills and knowledge throughout the first year.

Students were divided into four sections in the LMS, with sections A-C being Bundoora students and section D being regional campus students.

2. Question categories

The quiz consisted of 15 questions randomly generated from a question bank of 51 questions. The 51 questions were divided into categories related to the components of information literacy skill and knowledge embedded in the curriculum. Each student got at least one question from each category. Before attempting the quiz student would have had some experience of the modules and/or the first research task either individually or in their groups.

Question categories are as follows-

<table>
<thead>
<tr>
<th>Question category</th>
<th>No. of questions in question bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Finding items on a resource list</td>
<td>11</td>
</tr>
<tr>
<td>2. Referencing – APA style</td>
<td>5</td>
</tr>
<tr>
<td>3. Planning a search</td>
<td>9</td>
</tr>
<tr>
<td>4. Finding catalogue resources by topic</td>
<td>3</td>
</tr>
<tr>
<td>5. Finding journal articles in databases and peer review</td>
<td>9</td>
</tr>
<tr>
<td>6. Finding credible internet information</td>
<td>8</td>
</tr>
<tr>
<td>7. Finding media reports/newspaper articles</td>
<td>4</td>
</tr>
<tr>
<td>8. Finding health and social statistics</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>51</strong></td>
</tr>
</tbody>
</table>

Table 1 – Question categories

A student’s final score out of a total of 15 indicates how many they got right but because the quiz was designed as formative assessment tool students could have 3 attempts at the quiz, their best result being taken as their score. Completing the quiz represented 5% of the overall mark for the unit.

3. Completion rate

Across all campuses 90.7% of students completed the quiz. The quiz was part of the unit assessment rather than a hurdle requirement which means 9.3%
of students were prepared to forgo 5% of their assessment rather than complete the quiz. Completion rate was consistent across all campuses.

<table>
<thead>
<tr>
<th>Enrolments</th>
<th>No. completed quiz</th>
<th>% completed quiz</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bundoora campus</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1160</td>
<td>1056</td>
<td>91</td>
</tr>
<tr>
<td><strong>Regional campuses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>394*</td>
<td>354</td>
<td>89.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1554</strong></td>
<td><strong>1410</strong></td>
</tr>
</tbody>
</table>

* AW- 86; Bendigo – 262; Mildura – 23; Shepparton – 23.

Table 2 – Completion rate

4. **Overall score results**

Average and median scores were fairly consistent across all 4 groups.

<table>
<thead>
<tr>
<th>Section</th>
<th>Count:</th>
<th>Average:</th>
<th>Median:</th>
<th>Maximum:</th>
<th>Minimum:</th>
<th>Standard Deviation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section A Bundoora</td>
<td>494</td>
<td>12.3</td>
<td>13.0</td>
<td>15.0</td>
<td>0.0</td>
<td>2.11</td>
</tr>
<tr>
<td>Section B Bundoora</td>
<td>314</td>
<td>12.6</td>
<td>13.0</td>
<td>15.0</td>
<td>5.0</td>
<td>2.06</td>
</tr>
<tr>
<td>Section C Bundoora</td>
<td>248</td>
<td>12.2</td>
<td>12.0</td>
<td>15.0</td>
<td>6.0</td>
<td>1.95</td>
</tr>
<tr>
<td>Section D Regional campuses</td>
<td>354</td>
<td>11.5</td>
<td>12.0</td>
<td>15.0</td>
<td>0.0</td>
<td>2.39</td>
</tr>
</tbody>
</table>

Table 3 – Score results

Graph 1 - HLT1IPA – Section A. Data extracted: 28-5-09
Graph 2 - HLT1IPA – Section B. Data extracted: 28-5-09

Graph 3 - HLT1IPA – Section C. Data extracted: 28-5-09
5. Question analysis

Considering the consistency of response across the four LMS groups, question categories and individual questions have been analysed across the whole cohort in order to identify overall patterns and trends within question categories. For the purposes of analysis all individual questions within the 8 question categories have been given an abbreviated label.

The 51 questions in the question bank were attempted a total of 21,165 times with 17,149 right answers across all question categories. The percentage of correct answers for individual questions ranged from 46% to 98% (see Appendix 1). The actual number of attempts for each individual question ranged from 200 attempts to over 700 attempts (see Appendix 2).

The number of question attempts in relation to number of correct answers indicate the extent to which quiz was used as a formative tool. The percentage of correct answers within each category also indicates the categories where students performed least well. There were three categories where the percentage of correct answers was less that 80%. These include: Finding items on a resource list; Refining catalogue searches; and Finding journal articles in databases and peer review.

<table>
<thead>
<tr>
<th>Question category</th>
<th>No. of attempts</th>
<th>No. of correct answers</th>
<th>% correct answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Finding items on a resource list</td>
<td>5644</td>
<td>4027</td>
<td>71%</td>
</tr>
<tr>
<td>2. Referencing – APA style</td>
<td>2822</td>
<td>2513</td>
<td>88%</td>
</tr>
<tr>
<td>3. Planning a search</td>
<td>2822</td>
<td>2265</td>
<td>80%</td>
</tr>
<tr>
<td>4. Refining catalogue searches</td>
<td>1411</td>
<td>1100</td>
<td>78%</td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
<td>Corrects</td>
<td>Incorrects</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td>5.</td>
<td>Finding journal articles in databases and peer review</td>
<td>2822</td>
<td>2226</td>
</tr>
<tr>
<td>6.</td>
<td>Finding credible internet information</td>
<td>2822</td>
<td>2575</td>
</tr>
<tr>
<td>7.</td>
<td>Finding media reports/newspaper articles</td>
<td>1411</td>
<td>1122</td>
</tr>
<tr>
<td>8.</td>
<td>Finding health and social statistics</td>
<td>1411</td>
<td>1321</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>21165</strong></td>
<td><strong>17149</strong></td>
</tr>
</tbody>
</table>

Table 4 – Overall category results

5.1 Category 1 - Finding items on a resource list

This category included 11 questions. Questions related to finding books, journal articles and book chapters from a reading list. Typically questions in this category asked students to identify citations and identify the particular element of the citation that could be used to accurately find the item in the library catalogue, or demonstrate they had accessed a particular item by answering more specific questions about the item or the items catalogue record. Examples of the format of these questions are as follows:

Identify the resource described in the following citation:


a. Book
b. Journal article
c. Chapter from a book
d. An article published in a newspaper

or


Using the above citation, answer the following question:

Which element of the citation would you type into the library catalogue to begin to find this article via the library?

a. Mickan, S. M. & Rodger, S. A.
b. Effective health care teams…
c. Journal of interprofessional care

Eight of the questions in this category related to journals articles and three of the question related to books. While an average of 71% of students
answered questions in this category correctly, this category of questions was the least well-answered category overall. For individual questions there was a wide range in the percentage of correct answers from 47% to 90%.

![Graph 5 – Category 1 results – whole group](image)

There were seven questions in this category that were each answered correctly by at least 70% of students. Of these, questions about books were answered correctly more frequently than questions about journal articles. The question with the highest percentage of correct answers “Book title” was attempted 697 times (49% of students).

<table>
<thead>
<tr>
<th>Question Label/Question</th>
<th>% Answering Correctly: Whole Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Citation element 2</strong></td>
<td></td>
</tr>
<tr>
<td>Which element of the citation would you type into the library catalogue to begin to find this article via the library?</td>
<td>70%</td>
</tr>
<tr>
<td><strong>Citation element</strong></td>
<td></td>
</tr>
<tr>
<td>Which element of the citation would you type into the library catalogue to begin to find this article via the library?</td>
<td>70%</td>
</tr>
<tr>
<td><strong>Journal article access</strong></td>
<td></td>
</tr>
<tr>
<td>Use the library catalogue to check for access to the following journal article. This article is available online via the library catalogue. True or False?</td>
<td>71%</td>
</tr>
<tr>
<td><strong>Find page no. 2</strong></td>
<td></td>
</tr>
<tr>
<td>You have these details of this article. What is the page number of the last page of this article?</td>
<td>75%</td>
</tr>
<tr>
<td><strong>ID Resource</strong></td>
<td></td>
</tr>
<tr>
<td>Identify the resource described in the following citation (book)</td>
<td>77%</td>
</tr>
<tr>
<td><strong>Which element</strong></td>
<td></td>
</tr>
<tr>
<td>Which element in the following book chapter citation is the book title?</td>
<td>84%</td>
</tr>
<tr>
<td><strong>Book title</strong></td>
<td></td>
</tr>
<tr>
<td>Identify the title of the book in the following citation</td>
<td>90%</td>
</tr>
</tbody>
</table>

*Table 5 – Category 1 results - highest*
While four of the questions about journals articles in the previous table were answered correctly by at least 70% of students who attempted the question, equally there was another four questions in this category related to finding journal articles that were answered less well (see Table 6). However both lots of questions are similar. Given the similarity of the questions this is difficult to explain – perhaps some students had more attempts at some journal article questions in order to achieve a right answer.

<table>
<thead>
<tr>
<th>Question Label/Question</th>
<th>% Answering Correctly: Whole Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>You’ve done a search</td>
<td>47%</td>
</tr>
<tr>
<td>Journal Article</td>
<td></td>
</tr>
<tr>
<td>To locate a specific journal article in the library collection, search the library catalogue for the:</td>
<td></td>
</tr>
<tr>
<td>a. author of the article</td>
<td></td>
</tr>
<tr>
<td>b. title of the article</td>
<td></td>
</tr>
<tr>
<td>c. title of the journal</td>
<td>65%</td>
</tr>
<tr>
<td>Find page no.</td>
<td>65%</td>
</tr>
<tr>
<td>Locate a copy of the following journal article online via the library catalogue and find out: what is the page number of the last page of this article?</td>
<td>65%</td>
</tr>
<tr>
<td>Catalogue access</td>
<td></td>
</tr>
<tr>
<td>Use the library catalogue to check for access to this journal article. Which of the following statements is the most accurate?</td>
<td></td>
</tr>
<tr>
<td>a. The journal article is only available in print at the Albury Wodonga Library</td>
<td></td>
</tr>
<tr>
<td>b. The journal article is only available online, via the library catalogue</td>
<td></td>
</tr>
<tr>
<td>c. The journal article is available online, via the library catalogue and is available in print at some campus libraries</td>
<td>65%</td>
</tr>
<tr>
<td>d. The journal article is not available via the library</td>
<td></td>
</tr>
</tbody>
</table>

Table 6 – Category 1 results - lowest

The least well answered question ("You’ve done a search") in Table 6 (which was also one of two questions in the quiz with the percentage of correct answers under 50%) related to the correct element of a journal article citation used to search for and access an article in the library catalogue. The question was presented as a scenario that students are likely to encounter after having searched for journal articles in an article database. Overall there were 499 attempts at this question which represents 35% of the total cohort.

You’ve done a search in a library database and have found the following citation to a journal article which you have printed out. You are no longer in the library database. You know that you can search the library catalogue to see if the journal article is held. Which element from the citation would you type into the library catalogue to begin to find out if you can get the article from the library?

<table>
<thead>
<tr>
<th>Authors</th>
<th>Humphris, Debra</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author Full Name</td>
<td>Humphris, Debra</td>
</tr>
<tr>
<td>Institution</td>
<td>Innovations Unit, University of Southampton, Hants, UK</td>
</tr>
<tr>
<td>Title</td>
<td>Multiprofessional working, interprofessional learning and primary care: a way forward</td>
</tr>
<tr>
<td>NLM Journal Name</td>
<td>Contemporary nurse: a journal for the Australian nursing profession</td>
</tr>
</tbody>
</table>

a. Humphris, Debra
b. Contemporary Nurse
c. Multiprofessional working, interprofessional learning...
5.2 Category 2 - Referencing – APA style

This category included five questions. Questions in this category tested student understanding of elements of APA style and formatting. Overall students demonstrated a high level of understanding of APA style with 88% of answers to questions in this category answered correctly.

The question that was had the lowest percentage of correct answers in this group related to a technical detail of a journal citation element.

Table 7 – Category 2 results – lowest

5.3 Category 3 - Planning a search

This category included nine questions. Questions related to planning search strategies for use in either the library catalogue or databases. This category included question that test student knowledge and skill in improving precision and recall of search results.
While an average of 78% of students answered questions in this category correctly overall, for individual questions there was a wide range in the percentage of correct answers from 46% to 95%.

This category included one of two questions in the quiz that had less than 50% correct answers. Less than half of the students answering the Keyword question were not able to demonstrate an understanding of the Boolean concept “AND”. This question was attempted 282 times which represents 20% of students. However other search techniques seemed to be well understood (e.g truncation, spelling variants, phrase searching) and an extremely high percentage of students (91%) demonstrated an understanding of the importance of considering these types of aspects when planning a search.

<table>
<thead>
<tr>
<th>Question Label/Question</th>
<th>% Answering Correctly: Whole Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keyword</td>
<td></td>
</tr>
</tbody>
</table>
| A keyword search in one of the library databases such as Proquest 5000 or CINAHL for: nursing AND reflective practice would find records containing  
  a. both concepts  
  b. either concept, but not both  
  c. either or both of the concepts | 46% |
| Concepts                |                                     |
| Before searching for information for an enquiry you need to consider the concepts in the enquiry, including synonyms and variants of spelling of those concepts. True or False? | 91% |

5.4 Category 4 - Finding catalogue resources

This category included three questions. These questions related to refining catalogue searches and searching for specific formats. An average of 78% of
students answered questions in this category correctly overall, for individual questions there was a range in the percentage of correct answers from 67% to 84%.

**Graph 8 – Category 4 results – whole group**

### 5.5 Category 5 - Finding journal articles in databases and peer review

This category included nine questions. An average of 79% of students answered questions in this category correctly overall, for individual questions there was a range in the percentage of correct answers from 65% to 90%.

**Graph 9 – Category 5 results – whole group**
A total of five of the questions in this category related to understanding the nature of scholarly articles and peer review and how to distinguish and identify these types of articles within journal article databases. Percentage of correct answers ranged from 78% to 88%.

<table>
<thead>
<tr>
<th>Question Label/Question</th>
<th>% Answering Correctly: Whole Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scholarly</td>
<td>80%</td>
</tr>
<tr>
<td>CINAHL</td>
<td>81%</td>
</tr>
<tr>
<td>Scholarly journal</td>
<td>78%</td>
</tr>
<tr>
<td>Peer review</td>
<td>80%</td>
</tr>
<tr>
<td>Peer review 2</td>
<td>88%</td>
</tr>
</tbody>
</table>

*Table 9 – Category 5 results – highest and lowest*

Within this category there was also a demonstrable understanding of basic database search techniques and knowledge of how to access full text. However, while there seems to be a high understanding of the purpose of the Boolean operator AND in the context of the “Find journal articles” question this level of understanding was not demonstrated when a similar question was asked in Category 3 where only 46% of answers were correct.

<table>
<thead>
<tr>
<th>Question Label/Question</th>
<th>% Answering Correctly: Whole Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keyword (category 3 question)</td>
<td></td>
</tr>
<tr>
<td>A keyword search in one of the library databases such as Proquest 5000 or CINAHL for: nursing AND reflective practice would find records containing: a. both concepts b. either concept, but not both c. either or both of the concepts</td>
<td>46%</td>
</tr>
</tbody>
</table>

*Find journal articles (category 5 question)*

Use Proquest 5000 for this question. (Path: Library homepage > Articles via Databases > P etc).

Type: *intellectual disability* in the first box.

Of the options given below, how can you adjust the search to reduce the number results and perhaps give more specific results?

a. Remove the date limit
b. Add another concept with AND or in the next box
c. Consider possible variants of terms and use truncation or wildcard | 80% |

*Table 10 – Category 5/Category 3 comparison*

Questions related to use of truncation and wildcards within the category 5 questions resulted in a lower demonstration of understanding in this area (65%) compared to questions in category 3 that asked about the same concepts in a more straightforward way and elicited a higher level of understanding (71-90%).

<table>
<thead>
<tr>
<th>Question Label/Question</th>
<th>% Answering Correctly: Whole Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keyword truncation (Category 3 question)</td>
<td></td>
</tr>
<tr>
<td>A keyword search for ethic* (using asterisk for truncation) in the library catalogue would retrieve</td>
<td>81%</td>
</tr>
</tbody>
</table>
records containing

a. ethic only  
  b. ethics only  
  c. any word beginning with ethic

Keyword truncation 2 (Category 3 question)

When searching the library catalogue and databases the truncation symbol (asterisk *) after the word ‘disease’, what words would be retrieved?

a. disease  
  b. diseases  
  c. diseased  
  d. all of the above

90%

Wildcard (Category 3 question)

A wildcard (question mark ?) is used within a word to find spelling variations e.g. hospitali?ation. True or False?

a. True  
  b. False

90%

Truncation 2 (Category 3 question)

You are searching in the library catalogue for information on children. If instead of using the word children you type in child* , how does that change your results?

a. you get more results  
  b. you get fewer results  
  c. you get the same number of results

71%

Proquest (category 5 question)

Use Proquest 5000 for this question

Type: congenital amputation in the first box

Of the options given below, how can you adjust the search to increase the number of results and perhaps give more the results you are after?

a. Consider possible variants of terms and use truncation or wildcard  
  b. Search for your words in the Abstract  
  c. Search for the your words in the Document Title

72%

Table 11 – Category 5/Category 3 comparison

This variance across results perhaps suggests that while in first year students can grasp basic concepts they have not yet had the research experience to reinforce these skills and develop a deeper understanding of the concepts these basic skills may represent. There may also be issues of question design that need to be addressed in this kind of example.
5.6 Category 6 - Finding credible internet information

There were a total of eight questions in question category six. This category was the category with the highest percentage of correct answers, with 90% of questions in this category answered correctly. Answers to questions in this category suggest that students have a high level of understanding when it comes to discerning between different types of internet information and selecting appropriate internet information for university research assignments.

There was only one question in this category where there was a relatively low percentage of correct answers. This question related to Google books.

One way to increase the chances of finding internet information which is credible enough to be used in your university assignments is to use Google Books


<table>
<thead>
<tr>
<th>Question Label/Question</th>
<th>% Answering Correctly: Whole Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google Books</td>
<td>62%</td>
</tr>
</tbody>
</table>

Table 12 – Category 6 - lowest
5.7 Category 7 - Finding media reports/newspaper articles

There were a total of four questions in question category seven. Questions in this category tested student knowledge and skill in search techniques for TV News and Factiva, the two databases students were required to be used to locate media reports and newspaper articles during the semester.

There was a total of 1411 attempts at questions in this category with an overall percentage of 80% of questions answered correctly.

![Graph 11 – Category 7 – whole group]

The “Factiva” question was the question with the lowest percentage of correct answers (62%) in this category.

Why would someone use the Factiva database:

a. To find scholarly journal articles  
b. To find newspaper articles  
c. All of the above

5.8 Category 8 – Finding health and social statistics

There were a total of two questions in question category eight. The first question “Stats” test student knowledge of evaluating statistical data and the second question “Stats 2” asked students where they would look for statistical information for research purposes.

There was a total of 1411 attempts at questions in this category with an overall percentage of 94% of questions answered correctly. Students demonstrated a slightly better knowledge of how to evaluate statistical information compared to knowing appropriate sources of statistical information in the research context.
6. Summary of Findings and Recommendations

The quiz was completed by the majority, but not all CFY students. The online information literacy modules were designed to be used through the semester, including during the quiz. Many students made use of the modules while completing the quiz to support their learning.

Recommendation:

1. Investigate the quiz becoming a hurdle requirement
2. Check and review practice exercises in the modules to ensure there is sufficient modelling of similar quiz questions
3. Investigate an increased use of ‘doing’ questions in which students need to perform an activity to get an answer
4. Review quiz questions with a view to providing clear explanation as to what particular module provides the guidance for that question type (as the quiz is formative and to explicitly direct students to the learning resources provided for them)
5. Review quiz questions where students performed least well to identify issues with question design
6. Review instruction in the modules to include for multimedia learning objects that illustrate different types of scenarios, so skills can be demonstrated in a range of contexts to enable transfer of new skills
7. Consult with Faculty staff regarding: the timing of the quiz and promotion of the modules as the guidance tool; how questions are randomised; the number of questions in the bank in relation to the cohort number; and if there was any Faculty feedback from students or staff regarding the information literacy quiz
8. Retain use of question types which were well answered

---

1 Module usage data does reflect an increase during the quiz completion time.
What have we learnt about questions?
- Questions that involve making conceptual leaps from one step to another, require deeper thinking about transfer of skills to new situations
- Questions that require transfer of skill/knowledge to a given scenario require practice and reinforcement
- Applied questions - questions that give clear options to try to discover an answer returned more successful results rather than abstract theoretical questions (e.g. Boolean And -category 3/5) – however instruction and options need to be clear and explicit – in plain English (e.g. truncation/wildcard - category 3/5)
- Not all questions were equal in terms of difficulty

What have we learnt about student learning outcomes/skill development?
- journal articles
  - students need extensive support in this area
  - practice questions that put citation practice in range of situations
- books
  - intuitive and answered well by the majority
Appendix 2

All Questions - Question attempts: Whole Group

Question label
Appendix 3

Quiz Questions for 5% assessment in HLT1IPA 23 Feb 09

Question category 1 - Finding items on a resource list

Q1 label – ID resource

Identify the resource described in the following citation:


e. Book
f. Journal article
g. Chapter from a book
h. An article published in a newspaper

Answer: b

Q2 label – Citation element


Using the above citation, answer the following question:

Which element of the citation would you type into the library catalogue to begin to find this article via the library?

a. Mickan, S. M. & Rodger, S. A.
b. Effective health care teams…
c. Journal of interprofessional care

Answer: c

Q3 – Journal article

To locate a specific journal article in the library collection, search the library catalogue for the:
Q4 – Citation element 2


Using the above citation, answer the following question:

Which element of the citation would you type into the library catalogue to begin to find this article via the library?

a. Journal of interprofessional care  
b. Batorowicz, B. & Shepherd, T. A.  
c. Measuring the quality of transdisciplinary teams

Answer: a

Q5 – Book title

Identify the title of the book in the following citation:


a. Adolescent substance use  
b. Drug use in Australia: preventing harm  
c. Oxford University Press

Answer: b

Q6 – Catalogue access

Use the library catalogue to check for access to this journal article.


Which of the following statements is the most accurate?

a. The journal article is only available in print at the Albury Wodonga Library  
b. The journal article is only available online, via the library catalogue
c. The journal article is available online, via the library catalogue and is available in print at some campus libraries
d. The journal article is not available via the library

Answer: c

Q7 – Find page no.

Locate a copy of the following journal article online via the library catalogue and find out: what is the page number of the last page of this article?


a. Page 143
b. Page 146
c. Page 156
d. None of the above

Answer: b

Q8 – Find page no. 2

You have these details of this article. What is the page number of the last page of this article?

McAllister, A. (2004). People who are 'socially disadvantaged' and the role of the aged care assessment team: a case example. *Australian Health Review, 27*(2), 100-

a. 120
b. 102
c. 112

Answer: b

Q9 – Which element

Which element in the following book chapter citation is the book title?


a. *Adolescents and risk: making sense of adolescent psychology*
b. pp. 117-135
c. Preventing adolescent risk taking
Q10 – You’ve done a search

You’ve done a search in a library database and have found the following citation to a journal article which you have printed out. You are no longer in the library database. You know that you can search the library catalogue to see if the journal article is held. Which element from the citation would you type into the library catalogue to begin to find out if you can get the article from the library?

<table>
<thead>
<tr>
<th>Authors</th>
<th>Humphris, Debra</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authors Full Name</td>
<td>Humphris, Debra</td>
</tr>
<tr>
<td>Institution</td>
<td>Innovation Unit, University of Southampton, Hants, UK</td>
</tr>
<tr>
<td>Title</td>
<td>Multiprofessional working, interprofessional learning and primary care: a way forward?</td>
</tr>
<tr>
<td>Source</td>
<td>Contemporary Nurse. 2007 Aug</td>
</tr>
<tr>
<td>MASM Journal Name</td>
<td>Contemporary Nurse: a journal for the Australian nursing profession</td>
</tr>
<tr>
<td>Publishing Model</td>
<td>Journal available in: Print</td>
</tr>
<tr>
<td>MASM Journal Code</td>
<td>321867</td>
</tr>
<tr>
<td>Journal Subset</td>
<td>N</td>
</tr>
<tr>
<td>Country of Publication</td>
<td>Australia</td>
</tr>
<tr>
<td>MeSH Subject Headings</td>
<td>Cooperative Behavior, Interprofessional Relations, Learning, Primary Health Care</td>
</tr>
</tbody>
</table>

a. Humphris, Debra
b. Contemporary Nurse
c. Multiprofessional working, interprofessional learning…

Answer: b

Q11 – Journal article access

Use the library catalogue to check for access to the following journal article. This article is available online via the library catalogue. True or False?

a. True  
b. False

Answer: a

**Question category 2 - Referencing with APA style**

If you have this journal article:

**Article title:** Attitudes of health sciences students towards interprofessional teamwork and education.  
**Authors:** Curran, V. R., Sharpe, D., Forristall, J., & Flynn, K.  
**Journal title:** Learning in Health & Social Care  
**Volume:** 7  
**Issue:** 3  
**Page numbers:** 146-156  
**Year:** 2008

Which of these is correctly in APA style:


Answer: a

In a book citation, in correct APA style, which element comes after the author?
In a journal article citation, in correct APA style, what comes immediately after the journal title?

a. page numbers  
b. publication date  
c. volume and issue number

Answer: c

Given the citation below, what does the (2) refer to?


a. Volume number  
b. Issue number  
c. Shelf number

Answer: b

Use the library catalogue for this question.

*The collaborative partnership approach to care : a delicate balance / Laurie N. Gottlieb and Nancy Feeley ; with Cindy Dalton.*

What are the publishing details (place of publication, publisher and year of publication) for this book?


Answer: b
Question category 3 - Planning your search

A keyword search in one of the library databases such as Proquest 5000 or CINAHL for: nursing AND reflective practice would find records containing

a. both concepts  
b. either concept, but not both  
c. either or both of the concepts

Answer: a

A keyword search for ethic* (using asterisk for truncation) in the library catalogue would retrieve records containing

d. ethic only  
e. ethics only  
f. any word beginning with ethic

Answer: c

When searching the library catalogue and databases the truncation symbol (asterisk *) after the word ‘disease’, what words would be retrieved?

e. disease  
f. diseases  
g. diseased  
h. all of the above

Answer: d

A wildcard (question mark ?) is used within a word to find spelling variations e.g. hospitali?ation. True or False?

c. True  
d. False

Answer: a

When using international databases you must be aware of differences in spelling, for example: pediatric vs paediatric. True or False?
a. True
b. False

Answer: a

Before searching for information for an enquiry you need to consider the concepts in the enquiry, including synonyms and variants of spelling of those concepts. True or False?

a. True
b. False

Answer: a

You are searching in the library catalogue for information on children. If instead of using the word children you type in child*, how does that change your results?

d. you get more results
e. you get fewer results
f. you get the same number of results

Answer: a

You are searching the library catalogue for information on juvenile diabetes. If you put quotation marks around “juvenile diabetes”, instead of just typing in the two words, how does that change your results?

a. you get more results
b. you get fewer results
c. You get the same number of results

Answer: b

In the library catalogue and databases, how do you ensure that a search with more than two words is searched as a phrase in the order in which you type them. For example, you want: acquired brain injury, searched together in that order.

a. Use a question mark?
b. Use a hash #
c. Use quotation marks “”

Answer: c
Question category 4 - Finding catalogue resources

In the library catalogue, how can you refine your search to reduce your results to only show results published from 2002 to 2009?

a. Put that date in the search box with your keywords
b. In the advanced search screen enter dates in the Date After and Date Before boxes
c. Click on "Limit by date"

Answer: b

Audiovisual material is best found using the single search box on the front of the library homepage. True or False?

a. True
b. False

Answer: b

If you go to the library home page and do a search you can find (amongst other resources):

a. what books are for sale and their cost
b. books and audiovisual items which are in the library collection
c. all of the above

Answer: b

Question category 5 - Finding journal articles, including peer reviewed

Use Proquest 5000 for this question. (Path: Library homepage > Articles via Databases > P etc).

Type: intellectual disability in the first box.

Of the options given below, how can you adjust the search to reduce the number results and perhaps give more specific results?
a. Remove the date limit
b. Add another concept with AND or in the next box
c. Consider possible variants of terms and use truncation or wildcard

Answer: b

Use Proquest 5000 for this question (Path: Library homepage > Articles via Databases > P etc)

Type: congenital amputation in the first box

Of the options given below, how can you adjust the search to increase the number of results and perhaps give more the results you are after?

d. Consider possible variants of terms and use truncation or wildcard
e. Search for your words in the Abstract
f. Search for the your words in the Document Title

Answer: a

What would you do to search for journal articles which are scholarly in the Proquest 5000 library database?

a. Type scholarly into one of the search boxes
b. Tick "scholarly, including peer reviewed" box on the search screen
c. Look for an S next to the relevant results

Answer: b

What would you do to search for journal articles which are peer reviewed in the CINAHL library database?

a. Tick "university level" box on the search screen
b. Look for a P symbol next to the relevant results
c. Tick peer reviewed box just below the search screen

Answer: c

A usual feature of a scholarly journal article is:
a. The articles contain a list of works cited (or references)
b. The journal it is in always has ‘journal’ in the title
c. It always states at the beginning that it is scholarly

Answer: a

Peer reviewed journal articles have been checked by experts within the field before they are published. True or False?

a. True
b. False

answer: a

Peer reviewed journal articles can be updated by anyone just like Wikipedia. True or False?

a. True
b. False

answer: b

If you are doing a search for journal articles in library databases what do you get?

a. You always get the article in full and online immediately
b. You often get a summary and sometimes get the full article online immediately
c. You never get the article online immediately

Answer: b

You find a journal article in a library database, but the full article is not there. Which of the following statements is true?

a. If it is not immediately there you know for sure that the library does not have it
b. If it is not immediately there, you can check in the library catalogue to see if the library subscribes to the journal it is in

c. The library always has the print copy of all journals

Answer: b
When evaluating whether or not a website contains information credible enough to be used in your university assignment, it is important to consider:

a. Who is the author?

b. When was the information published/produced?

c. All of the above

Answer: c

Use the Better Health Channel website for this question.
http://www.betterhealth.vic.gov.au

On this website find the Fact Sheet about Asperger Syndrome. Go to the bottom of the fact sheet. Which organisation has this page been “produced in consultation with and approved by”?

a. Imedix: http://www.imedix.com/asperger


c. Association for Children with a Disability: http://www.acd.org.au

d. All of the above

Answer: b

The ABS web site (www.abs.gov.au) is a government web site. True or False?

a. True

b. False

Answer: a

Wikipedia http://www.wikipedia.org/ is a government website. True or False?

a. True

b. False
Wikipedia [http://www.wikipedia.org/](http://www.wikipedia.org/) can only be updated by experts from an educational institution. True or False?

- a. True
- b. False

Answer: b

One way to increase the chances of finding internet information which is credible enough to be used in your university assignments is to use Google Scholar. True or False?

- a. True
- b. False

Answer: a

One way to increase the chances of finding internet information which is credible enough to be used in your university assignments is to use Google Books [http://books.google.com.au/bkshp?hl=en&tab=wp](http://books.google.com.au/bkshp?hl=en&tab=wp)

- a. True
- b. False

Answer: b

Which of the following would make you wary of using an internet resource for your university assignments?

- a. The home page was last updated in 2009
- b. The site has .edu in the url
- c. The site is run by a drug company and has .com in the url

Answer: c
Question category 7 - Finding media reports/newspaper articles

Why would someone used Factiva database:

d. To find scholarly journal articles
e. To find newspaper articles
f. All of the above

Answer: b

Use Factiva database for this question. (Path: Library homepage > Articles via Databases > F > Factiva)

Drop the Date drop down box from ‘in the last 3 months’ to “in the last year”
Find the newspaper article title: Secrets for a long life confirmed in 30 years of Mediterranean research” What newspaper was this article published in on 13 September 2008?

a. Herald Sun
b. The West Australian
c. The Age
d. The Australian

Answer: b

TVNews database indexes Australian television news, current affairs and selected documentaries from free to air networks with links to the digitised video clips. True or False?

a. True
b. False

Answer: a

Use TV News database for this question. (Path: Library homepage > Articles via Databases > T > TV News)
Search for a TV clip on “Influenza” in TV News. The number of results within your results list is:

a. Between 1-5
b. Between 6-10  
c. Between 11-19  
d. More than 20  

Answer: d

**Question category 8 - Finding health & social statistics**

When evaluating your statistical data, which questions would you ask?

a. Is the reporting body reputable  
b. How was the information gathered  
c. Are the statistics up to date  
d. All of the above  

Answer: d

Where can you look for statistical information for your research?

a. The library catalogue  
b. Google scholar  
c. Organisational and professional bodies via the internet  
d. All of the above  

Answer: d
Appendix 11 – Usability testing report
Health Sciences Information Literacy Modules

Usability Testing Report

20 November 2009

Jenny Corbin
Sharon Karasmanis

On behalf of the Library Health Sciences Evaluation Working Group
Jenny Corbin Eva Fisch Fiona Salisbury Chris Wanklyn Claire Brooks Sharon Karasmanis
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1. Introduction

La Trobe University Library staff developed a series of information literacy online modules to support Health Sciences students in the new Common First Year in 2009. The required elements in the modules were essential to support enquiry-based learning and align with the curriculum, as well as learner centred, engaging, effective, scalable, and available at the point of need.

The modules were designed to suit the learning model in which students have to identify what information they have, what type of information they think they might need and find the information. Other design features of the modules included:

- The ability for students to dip in and out of whatever parts they need, rather than having to ‘complete’ them in a linear fashion
- A choice for the students to click on a diagram, which might relate to the stage they are at, in their information seeking.
- Availability to the students on the web at any time if they wish to come back to them.

The modules utilise the LibGuides software developed by Springshare, and consist of text, visuals of screens interspersed, practice exercises and multimedia videos (created both in-house and external) where appropriate.

As part of the Library’s extensive evaluation project of Library support to the Common First Year, usability testing of the modules was conducted between May and June 2009. The modules are available at: www.latrobe.libguides.com/health_sci

2. Ideas from the literature

There are many aspects to consider when designing usability tests. In reviewing 22 case studies of usability testing of academic websites conducted between 1999 and 2004 Letnikova (2008) reported on the importance of particular issues such as:

- the role of the wording of questions
- testing should cover parts of the interface which are related to common tasks
- tasks need to be able to be completed within a given time frame
- important to include a morale boosting task first (and as a 'warm-up' exercise)

Letnikova also points out that it can be difficult to determine why a participant fails to perform a task – was it because of poor design of the site, wording of the usability testing, or lack of information seeking skills? This is also noted by Vaughn and Callicott (2004), who state that ‘usability presumes that all problems associated with a web site stem from design issues’ (p.13), where in fact often the actual issue is the lack of research skills, (including fundamental library skills), and knowledge of library terminology.

Other usability testing guidelines evidenced by reports of usability studies (U.S. Department of Health and Human Services, 2006) provide suggestions such as:

- ‘conduct a test where representative participants interact with representative scenarios’ (p. 188)
- ask for participants to comment either during the task or afterwards
- the number of participants tested should be more than 6

Although the Letnikova review and U.S. Department of Health and Human Services guidelines were related to web design, many of the issues were seen as relevant, and therefore considered, in relation to the design of usability testing for modules in this context.
3. Summary of the background and logistics

Objectives of the testing
The aim was to gain student feedback on the structure, design and navigation of the LibGuides, and the usefulness of the content. The activities were created with all aspects in mind. If a student has to do task X, can they:
- Find the instructions on how to do task X?
- Follow the instructions to actually do task X?

Objectives of the testing did not include placement of the link to the modules i.e. finding or navigating to the modules from either the Library homepage or the Learning Management System.

Pilot testing
Pilot testing was carried out at the Albury-Wodonga (1 session) and Bundoora (4 sessions) campus Libraries on 15th May 2009. As a result four versions (sets) of the testing were created, rather than the original three, to reflect the broad content coverage of the modules. Some pilot participants felt that they were in a ‘test’ situation (as if they personally were being tested, and not the modules), so in order to address this aspect and make participants more comfortable, a few changes were made:
- A standard easy morale boosting activity was placed at the beginning of each activity set as suggested by Letnikova (2008), so that the participants were able to ‘warm up’
- Extra notes were placed in the both participant and staff instructions to reassure the participants that it was about the usability of the modules and not their ability to find information
- The word ‘testing’ was removed from the activity title in favour of usability ‘feedback’
- Overall, activities and the brief feedback survey were adjusted based on the pilot feedback

When and where the testing was held
Usability testing was conducted with twenty-one students across the Albury/Wodonga, Bendigo and Bundoora campus Libraries of La Trobe University between 26th May and 19th June 2009 at a mutually convenient time for students and Library staff. The testing was timed so that it would be conducted once the Information Literacy Quiz1 had closed. Each usability testing session took approximately thirty minutes including explanation.

The participants: information about how they were chosen and any other non-identifying details
Participants were all first year Health Sciences students of La Trobe University.
- Albury-Wodonga participants were randomly chosen from groups of health sciences first year students working in the Library.
- Bendigo participants were a targeted group of mature age students.
- Bundoora participants were a mixture of students who had volunteered via forms given out at Library sessions and from Health Sciences first year students working in the Library.

Participation was voluntary and students were provided with coffee or movie vouchers in appreciation of their time. Although not intentional, there was representation in terms of gender, age groups, local and international students.

Who conducted the testing
Although Health Sciences librarians (1 at Albury-Wodonga; 1 at Bendigo; 4 at Bundoora) conducted the testing, the students were left on their own to complete the task with brief verbal instructions given, but detailed instructions on paper.

---
1 The Information Literacy Quiz was delivered via LMS, consisted of 15 randomised multiple choice questions based on the content in the modules, and worth 5% of the student's assessment of a first semester unit.
What was tested

The testing consisted of three activities which recorded students via screen capture and audio. There were four versions/sets which focussed on tasks relating to usage of different modules. The students were also asked to complete a brief written feedback survey.

Each set consisted of instructions for library staff, instructions for participants, an activity sheet with space for comments and detail about tasks, and a brief feedback survey, in which students were able to make comments about particular aspects of the modules. Brief information about the aim of each set is given in table 1, with the documents for all testing sets in Appendix 1.

Table 1. Aims of Usability Activity Sets

<table>
<thead>
<tr>
<th>Activity set number</th>
<th>Aim of the Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Activity required the student to locate the module to help them “Find an item on a resource list”, then use that information to find the listed citation and access the full text on screen.</td>
</tr>
<tr>
<td>2</td>
<td>Activity required the student to locate the module to help write out a reference in correct APA style, and within that module find an appropriate example, then use the information in the example to write a citation correctly</td>
</tr>
<tr>
<td>3</td>
<td>Activity required the student to locate the module on “Finding journal articles on a topic”, then use the guidance to find a listing (not full text) of 3 journal articles on diabetes via the library.</td>
</tr>
<tr>
<td>4</td>
<td>Activity required the student to locate the module/tutorial to help determine the credibility of a website and show what they’ve found by writing down two points</td>
</tr>
</tbody>
</table>

Table 2. Activity sets distribution by campus

Activity sets were distributed across campuses so that sets one and four were utilised at three campuses and sets two and three at two campuses.

<table>
<thead>
<tr>
<th>Activity Set no:</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number completed overall</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>21</td>
</tr>
<tr>
<td>Number completed by campus</td>
<td>1 AW 1 Bend 4 Bund</td>
<td>1 Bend 4 Bund</td>
<td>1 AW 4 Bund</td>
<td>1 AW 1 Bend 3 Bund</td>
<td></td>
</tr>
</tbody>
</table>
Technical aspects
Students were given fifteen minutes to do the activities and five minutes to fill in a brief feedback survey. At the beginning of the session, Library staff set up the computer with Camtasia recording software and opened two screens: the Information Literacy Modules and the Library homepage. Browsers in use for the testing were: Firefox (used by two campuses) which was preferred, and Internet Explorer (one campus had technical problems with Firefox). There were three instances in which the audio did not record.

Ethics
This project complies with the relevant ethics guidelines\(^2\): La Trobe University, Human Research Ethics Guidelines, Staff Survey Guidelines and Student Survey Guidelines, and falls into the “negligible risk” category.

4. Limitations

Timing
Testing was scheduled after all students had been able to complete the online Library Quiz, an assessment within HLT1IPA. There was only a short time frame to carry out the usability testing between completion of the quiz and semester one examinations. Therefore the availability of students at this time was difficult, and resulted in lack of attendance of scheduled appointments and rescheduling in a few cases. Scheduling, communication, administration and organisation of the sessions was time consuming.

Brief feedback survey
Participants made positive comments about certain aspects e.g. navigation (perhaps because they were asked a direct question and don’t like to say negative things), however, this did not match with that particular participant’s results, as it was obvious from the recording that the participant had problems with navigation.

Equality of testing sets
The four testing sets were not equal in the level of difficulty, yet the same amount of time was allocated to all, with participants testing set three at a definite disadvantage due to the complexity of the task and the amount of material.

Clarity of instructions
It was clear from viewing the on screen activity that some participants were uncertain of what was required to undertake the usability task and it may have been beneficial to give more verbal instructions.

Language
The language in the activity sets may have created confusion for some participants, as discussion after the testing revealed that one of the participants was an international student.

Choice of activity example
In Set 1, participants were asked to find the full text of a single known journal article citation. At the journal supplier point, the article was not on the first page of the issue (screen), making the task a little more complex than perhaps necessary. The article was titled ‘Understanding teams and team work’ and as the articles were displayed alphabetically, participants had to scroll through three screens to find it.

5. Summary of the qualitative and quantitative data

5.1 Activity 1 Summary

In this first activity all participants were asked to view the video ‘Can’t I just Google?’ which is available from the left hand menu bar on the Health Sciences Information Literacy Modules homepage. Students were advised that the video would take three minutes and were asked to comment on what works well, and what could be improved with this video. The twenty one student responses were summarised into three facets – appropriateness or usefulness, physical quality and acting or animation of the video.

Appropriateness, usefulness or relevance of the material
A majority of respondents (14) commented on the usefulness of the material, indicating they understood what it was explaining, and could relate to the scenarios, that it was relevant and accurate. Students found the video easy to listen to, with humour, and a clear explanation and depiction of the real life university situation. There was also comment on the usefulness of a visual tool, animated video, and impressive graphics.

Some of the positive comments included: ‘students would relate well to animated video'; ‘appropriate'; 'easy to listen to'; 'to the point', and 'easy to understand'; 'slow; clear; images help'; 'easy to relate to the characters'; 'specifically says wikipedia is bad'; 'graphics and visual'; 'speech is clear'; 'information put in an interesting way'.

The suggestions for improvement included:
- instruction on how to improve searches
- guidelines for better ways to conduct research
- more examples would have improved the video
- examples of websites not to use
- examples of scholarly databases (including Google Scholar) and how to find them
- how to narrow the searches
- how to access the full text of documents
- provision of subtitles, so that information is clear for international students.

Physical quality of video
Seven students commented on the physical quality of the video, with three positive and four negative responses. Positive comments included, the ease of listening and understanding, and the clarity and speed of the speech. Students also mentioned that the graphics and visuals were good.

The negative comments related to the video transmission; one student noting the transmission being ‘jerky’, ‘the video lags and doesn’t run smoothly’. Two students noted that clarity of speech was a problem, one being an international student who also added that the speed of the speech was problematic. Two students commented on the length of the video, and felt that a shortened version would be an improvement.

Acting and animation
Four positive comments noted that students would relate well to animated characters, and felt that the acting and animation was easy to listen to, to the point, slow, clear, displayed helpful images and graphics, and it was easy to relate to the characters. There were seven negative comments which concerned the use of animated characters generally, in particular, comments on the girl in the video being cold, her tone of voice, not appearing very friendly, just reading the script and not talking naturally. She also sounded angry and the student felt she was off putting. Another comment noted her as a little degrading. Students also commented on the use of cartoon characters being childish, and using people would make it easier to relate to. One comment noted the cartoon walk as funny.
5.2 Summary of Sets 1 – 4
Analysis within each set is divided into different steps, depending on the level and aspect of analysis required for each module.

Set 1 – Find the module to help with finding a known journal article citation. Then follow the guidance to get the full text of the article.

A) Finding the correct module:

What worked
- 3 of 6 participants chose the correct module

What did not work
- 2 of 6 participants selected the incorrect module
- 1 of 6 participants did not use the module at all.

Issues
- At some point 4 of 6 participants were looking for guidance in ‘Finding journal articles by topic’, indicating a level of confusion
- Some participants did not recognise the correct module at all, (or were confused between the ‘Finding items… and Finding journal articles…’) instead used ‘Finding journal articles on a topic’
- 1 participant did not realise that they needed to use the modules at all.

Findings
The module ‘Finding items on a resource list’ is not always recognised as a tool which will help students find a single journal article from a known citation. When students are using this module to find items on a resource list for their subject enquiry task, the module is linked as a tool to help with that task, but when presented with a single journal article citation, it seems there was confusion between the modules ‘Finding items on a resource list’ and ‘Finding journal articles by topic’, with participants favouring ‘Finding journal articles by topic’ (perhaps by matching up the language ‘journal article’).

B) Finding an appropriate pathway within the module:

What worked
- Of the 3 (of 6) participants who chose the correct module, only 2 used an appropriate path within the module.

What did not work
- 1 of 6 participants found the correct module but did not use it.
Issues

- Navigation:
  - Two participants scrolled to the bottom and missed the top tabs, however one participant linked to other tabs within the boxes
  - One participant hovered and tried to click on spots within the first screen on ‘Finding items on a resource list’ example
  - One participant, even though in the correct module, did not recognise this as a pathway to finding the journal article

Findings

It is beneficial to have internal links to the following page in the modules.
In this module there are internal links, to give the students an alternate path in case they miss the top tabs.

Top tabs are not seen as an obvious pathway through the modules.
No participants used the top tabs, but one did link within the box to the next section.

Participants attempted to use the left menu to navigate within the module.
Most participants used the left hand menu bar in an unsuccessful effort to navigate within the module, possibly one of the reasons that participants used the ‘Finding journal articles by topic’.

The finding journal article citation multimedia item is a useful tool.
One participant commented that video instruction was preferable to reading instructions.

C) Follow the instructions to get a result - Journal title level:

What worked

- 2 of 6 participants found the journal title (either print or electronic) after using the instructions in the modules for guidance
- 3 of 6 participants found the journal title (either print or electronic) from searching the Library catalogue, without using the modules for guidance.

What did not work

- 1 of 6 participants went to Articles via Databases and searched across general health databases and searched unsuccessfully for the journal title in LibXplore.

Findings

Most participants (5 of 6) got to (even if eventually) the journal title level in the Library catalogue, although they didn’t all use the guidance in the modules.
D) Follow instructions to get a result – Journal article full text:

What worked

- 2 of 6 participants found the full text of the journal article using the module for guidance
- 1 of 6 participants found the full text of the journal article using the Library catalogue intuitively and did not use the modules.

What did not work

- 3 of 6 participants did not find the full text of the journal article.

Issues

- Electronic resource record vs print copy record issues:
  - 2 participants clicked on the print copy record trying to access full text
  - Participants who found the correct journal title via the Library catalogue (print and electronic) did not realise (just hovering) to click on the title with the format [electronic resource] to continue through to the full text of the article
  - One participant navigated between the modules and the databases without success, clicked on the journal print record and wandered around looking at the print locations clicking and looking for full text (possibly as the print record displays first in the results list, participant did not click on the electronic record which displays second in the list).

- Proquest issues:
  - One participant had trouble finding the article in the Proquest article list of search results, not realising that the articles were listed alphabetically. (i.e. Understanding teams and team work….had to click through three screens to find it). This is possibly a limitation of this task – it would have been perhaps more useful to choose an article that was on the first page.

- LibXplore issues:
  - One participant typed the journal title into LibXplore without success, so did not proceed to the article level.
  - As the Google cartoon exercise was viewed first, this may have influenced the participant’s decision to use LibXplore, as this method of search is depicted in the cartoon.

Findings

It appears that some students have difficulty interpreting the Library catalogue journal title search result, as shown by participants who did not recognise the difference between the print copy record and electronic record. The record that shows [electronic resource] in the format field does not seem to be intuitive enough, as some participants hovered over both links and in some cases did not click through to the full text of the journal issues underneath. Only one participant found the journal title easily using the modules.

Participants, who got to the journal title level in the Library catalogue (5 of 6), did not necessarily successfully achieve access to the full text where available (2 of 6). Only two of the six participants used the modules successfully to find the full text of the article. The other four participants had problems ranging from recognition of, and navigation within the modules, interpretation of the catalogue entry in the search result, and interpretation of instructions for using the databases. This is complicated by the fact that the LibXplore search box sits underneath the list of databases (when searching the list of databases by subject), which guides the participant to that box, nowhere does it suggest to the participant to click on the individual database to search the native interface.
Set 2 - Find the module to help write out a reference in correct APA style, within that module find an appropriate example, and then use that information to write the citation correctly

A) Finding the correct module:
What worked

- 4 of 5 participants chose the correct module instantly.

What did not work

- 1 of 5 participants did not use the module but may have been confused by the task

Findings

'Referencing with APA' is a recognisable label as being relevant to this type of task.

B) Finding an appropriate pathway within the module:
What worked

- 4 of 5 participants chose a link which would lead them to an appropriate example

What did not work

- 1 of 5 participants did not use the module but may have been confused by the task

Issues

- Of the 4 participants who used the modules: only 1 used the top tabs; and none used the sub tabs or the examples provided in the module which would have provided a more direct solution and used less clicks (instead clicking through to the examples in the Study Skills Handbook).
- 1 participant did not use the modules but may have been confused by the task
- Having links in the text of a page, in addition to tabs was beneficial, as 4 participants used in-text links to lead to an appropriate example, with one participant using a top tab (eventually).
- Participants seemed to recognise the Faculty's Study Skills Handbook (Pavlidis, 2009) as being able to assist with referencing.
Findings

It is beneficial to have in-text links within the boxes as an alternative path to the top tabs. It seems (due to hovering and scrolling up and down) that in regard to navigation of the modules, it is not intuitive to work through the top tabs.

It is beneficial to have the main Faculty source (a clearly recognisable tool) as a link in a prominent place. Participants did not use the ‘Examples’ tab in the modules, perhaps because it was not an in-text link on the main page, or because they recognised a tool (Study Skills Handbook) they are familiar with first, before having an opportunity to see the tab.

C) Find an appropriate example and use it to write a citation in APA:

What worked

• 4 of 5 participants found their way to an appropriate example to copy/model/guide. In all four examples, participants used an appropriate source found in the Faculty's Study Skills Handbook. Of the 4 participants who found an example to model, scores\(^3\) of their APA citation skills ranged between 2/10 – 8/10.

What did not work

• 1 of 5 participants did not use the module but may have been confused by the task

Issues

• Despite one participant not seeking an appropriate example in the modules, the participant found the item via the Library catalogue and achieved a score of 9/10 for the APA citation skills. Perhaps this was due to existing knowledge, as in this participant’s brief feedback survey in answer to question about how would you have known how to cite in APA before today, the participant noted: “Mainly rely on booklet written by lecturer and seminar run”
• It seemed that at least one participant followed a description of elements for a book citation rather than the example below it from the Study Skills Handbook, and therefore omitted the correct punctuation.

Findings

Most students found an appropriate example to model via links in the modules and were able to list a citation in at least partly correct APA style.

\(^3\) Each participant was given a score out of 10 based on correct placement of elements, correct punctuation etc.
**Set 3 – Search for a journal article on a topic**

Find the guidance in the modules on finding journal articles on a topic and read or view anything that looks relevant. Follow the guidance you found in activity two, to find 3 journal articles on diabetes via the Library.

‘Activity three is completed when you have found three relevant journal articles listed. You do not need to view the full text of the articles’ (as stated in the task instructions)

A) **Finding the correct module:**

What worked

- 4 of 5 participants chose the appropriate module

What did not work

- 1 of 5 participants did not go to the modules at all

**Issues**

- Some participants used the tabs but did not use the sub tabs
- 1 participant did not realise that the red tab was the top tab, and only used the sub tabs
- 1 participant looked at the module but did not see the relevance to the activity, possibly did not understand the task of usability testing, this could also be attributed to a flaw in the testing design indicating that the task was not clear enough

**Findings**

‘Finding journal articles on a topic’ is a recognisable label as being relevant to this type of task. The participants recognised the correct module, and appeared to find this quite easily as evidenced by the way it was found quickly, not scrolling up and down scanning the module titles.

B) **Finding the appropriate pathway within the module:**

What worked

- 4 of 5 participants used the correct module and reached the content in the modules (search databases) to assist with the pathway to an appropriate database.

What did not work

- 1 of 5 participants did not use the module at all.
Issues

- Of the four participants who navigated around the module there was, apart from the use of one subtab, no use of sub tabs by three participants, which in this case held vital information to the task related to particular databases.
- The task of finding journal articles does have steps and a linear order of aspects – so how students absorb or don’t absorb this stepped process may be a significant factor in how the content from the modules is digested and applied.
- There was much clicking and scrolling by at least one participant who seemed unsure of an appropriate path to the relevant information in the modules
- Links in the module pages to tabs or sub tabs, where they may have been helpful, were scrolled or seemingly skimmed over.
- Four participants used a combination of links to tabs from the main page and top tabs, with more use of links within pages rather than top tabs.
- Some participants also viewed practice exercises content and navigated from that page to search for Proquest on the Library homepage.
- One participant did not understand ‘Identify search terms’

Findings

The pathway through the module was not clear in the case of this particular task which may be due to placement, labels, design or other. There was more use of the top tabs in this task than other tasks with most participants methodically navigating their way through the module. Links within the modules to tabs content were well utilised, but sub tabs were not generally used. It is beneficial to have internal links to the following box in the modules; however in this module even though most of the participants worked through the modules via the top tabs, some missed the top red tab as the main page and only used the sub tabs. There did not appear to be clear understanding of the pathway to the databases, considering the methodical examination of the modules by some participants. The ‘Search Databases’ link was used but it seemed that participants were unsure where to go after that.

C) Follow the guidance to select a database:

What worked - Choice of entry point at the Library home page

- 3 of 5 participants clicked on ‘Articles via Databases’ > Subject area > Health > General
- Only 1 of these three participants clicked into the database CINAHL to use the native interface

Did not work - Choice of entry point at the Library home page

- 2 of 5 participants clicked on ‘Journal Titles’, although one of those verbalised that he/she was looking for the Proquest link.
- 4 of 5 participants had chosen ‘Journal Titles’ at some point.
- Of those who had chosen ‘Articles via Databases’ (3 of 5), two participants used the ‘Search within these databases’ LibXplore search box
- 1 of 5 participants spent a lot of time between the Library catalogue, the University home page and the module, without finding the databases at all (at one point typing in ‘journals’ in the University home page search box)
Issues

- ‘Journal Titles’ as an entry point, albeit not the appropriate pathway was a popular choice with all the participants, even though 3 participants eventually used the more appropriate ‘Articles via databases’. Labelling of the tabs on the Library home page appears to create confusion between ‘Journal titles’ and ‘Articles via databases’.
- Most of those, who clicked on Articles via databases > Subject area > Health > General, used the LibXplore search box, which resulted in too many and/or irrelevant articles and seemed to create confusion. Note that an error in the Can’t I just Google? video does include that search box in use, although guidance in the modules directs students to the native interface links rather than the ‘Search within databases’ box.
- One participant commented ‘hard to know which database to use’ but did not use the information icons to check.
- Participants did not recognise Proquest as a database, thereby not realising/matching the location of Proquest within ‘Articles via Databases’.

Findings

Instructions in the modules on choosing and accessing a database did not effectively guide the participants to the selection and use of an appropriate database. All participants searched initially in ‘Journal Titles’, although three did move to the appropriate entry point of ‘Articles via Databases’. Selecting an appropriate database appeared to be a huge challenge for participants, as they appeared to get lost at the point of navigation from module to the Library home page.

D) Find a usable list of relevant articles:

What worked

- 1 of 5 participants found the list correctly from a search in the database CINAHL

What did not work

- 4 of 5 participants overall, did not find a list of three relevant journal articles
- 1 of 5 participants found a usable list of articles, via the catalogue, journal title, clicking on the Proquest location link, then searching under ‘Suggested subject headings’ within the Proquest database
- Of those who had chosen ‘Articles via Databases’ (3), 2 participants used the ‘Search within these databases’ LibXplore search box and did not achieve a relevant result
- 2 participants who had initially used the ‘Journal Titles’ tab found a list of three relevant journal articles by searching within a relevant electronic journal title record

Issues

- Proquest issues – covered in Set 1
- Participants did not always recognise the publisher site as a location to click on, for example Wiley Interscience – but they did click on the Proquest link, possibly because this was demonstrated in the module
- Some participants had difficulty at the publisher’s web site, and did not realise they needed to click into an issue list
- 1 participant did not recognise that ‘Access full text’ was a pathway to the full text of the article
- All participants at some stage during the activity looked for journal articles under the ‘Journal Titles’ tab, and scrolled through journal titles on diabetes
Findings

Instructions in the modules to access articles from a Library database did not effectively guide the participants to access a relevant list of articles by searching an appropriate database. Only 2 of the five participants found a usable list of articles, and only 1 of these completed the task correctly by searching within the native interface of the CINAHL database. Participants who used the LibXplore search box were unable to achieve a result due to too many and/or irrelevant articles.
Set 4 - Find the module to help determine the credibility of a website and show what they've found by writing down 2 points related to credibility.

A) Finding the correct module:

What worked

- 4/4 who completed this activity chose appropriate module

What did not work

- One participant did own searching in another module “Finding health & social statistics” and so did not participate in this particular activity. A brief feedback survey was completed however from this participant.

Findings

‘Finding Credible Internet Information’ is a recognisable label as being relevant to this type of task i.e. someone looking for guidance on what criteria to use

B) Finding the appropriate pathway within the module:

What worked

- 4 of 4 participants followed a path to either ‘Credibility tab’ (2 participants) or ‘More info on credibility’ link at bottom of main page (2 participants)
- 1 participant commented that the mouse over explanation on the left menu was useful
- Comments by 1 participant regarding navigation: ‘Handy to scroll down and navigate within as a step by step approach’ and ‘Easy to go back’

Issues

- Didn’t read the information (or stay) once in the credibility tab and went (left menu) to ‘Finding Journal Articles by Topic’ > peer reviewed information (1 participant who is mature-age)
- 2 participants did not use the top tabs
- 1 participant seemed to expect the answer to be on the main (first) page
- 1 participant who used top tabs and went thoroughly through all of them, did not use the sub tabs

Findings

Both top tabs and links in the first page led participants toward an appropriate path, however navigating to content beyond that appeared problematic. Sub tabs information was not utilised on the whole
C) Showing what they’ve found by writing down 2 credible points

**What worked**
- 3 of 4 participants successfully found the relevant information and noted 2 correct credible aspect points each
- Participant comments: “good visuals”; liked examples under “what to look for”; “bias explanation good”.

**What did not work**
- One of 4 participants completed the activity with assistance

**Issues**
- As above, 1 of 4 participants had been in the correct place but since didn’t stay there, didn’t complete activity independently (seemed to be not confident). Librarian assisted, although participant had been in appropriate place.

**Findings**
The content of the credibility criteria information is clear enough for most participants in this testing to read, absorb and note (hence comments above, with visuals and examples seen to be useful).
5.3 Frequency and Severity of Issues

Where issues are identified, it is useful to analyse the frequency and severity of the issue across the activities in the sets to assist in prioritising any recommendations. ‘The number of users affected determines the frequency of a problem’ and ‘the severity of a problem should be defined by analysing difficulties encountered by individual users’ (U.S. Department of Health and Human Services, 2006: 191). If the difficulties block a user from getting to vital information or instructions to achieve a task, then the severity rating would be high.

**Frequency** in this report has been given ratings of:
- L (low) = occurs in 1 set
- M (medium) = occurs in 2 sets or most of the participants in 1 set
- H (High) = occurs in 3 or more sets

**Severity** in this report has been given ratings of:
- L (low) = did not affect achievement of task
- M (medium) = partly affected achievement of task
- H (High) = severely affected achievement of task

Main issues arising from the activities in the sets have been given a frequency and severity rating in the table below.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Frequency rating</th>
<th>Severity rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of use or confusion when using tabs or sub tabs. Problematic in all sets for many participants.</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>‘Journal titles’ link in Library homepage used when searching for journal articles by topic. Problematic in one set but for most participants of that set.</td>
<td>M</td>
<td>H</td>
</tr>
<tr>
<td>LibXplore search box use. Problematic in 2 sets</td>
<td>M</td>
<td>H</td>
</tr>
<tr>
<td>Selecting an appropriate database to search. Problematic in 1 set but for most participants of that set.</td>
<td>M</td>
<td>H</td>
</tr>
<tr>
<td>Electronic resource vs print copy issues in Library website. Problematic in 1 set but for most participants of that set.</td>
<td>M</td>
<td>H</td>
</tr>
<tr>
<td>Trying to use left menu bar for navigation within a module. Problematic in 1 set</td>
<td>L</td>
<td>M</td>
</tr>
<tr>
<td>Trying to click on screen capture. Problematic in 1 set</td>
<td>L</td>
<td>L</td>
</tr>
</tbody>
</table>
5.4 Brief Feedback Survey Summary

**Question 1 a)** Participants were asked if they had used the modules before. 15 of 21 had used them before (71%) and 6 of 21 had not (29%)

**Question 1 b)** Participants were asked that if they had used the modules before, had they used the practice exercises, and if yes, how useful they were. Of those who had used the modules, 8 of 15 had used the practice exercises. All of those who had used the practice exercises made positive comments about the usefulness of them as is shown in table 3.

**Table 3: How useful were the practice exercises?**

<table>
<thead>
<tr>
<th>ID</th>
<th>Responses: (for those that had used the modules)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Good to practice, but need to do it several times to improve skills</td>
</tr>
<tr>
<td>6</td>
<td>Quite useful, but searching still difficult</td>
</tr>
<tr>
<td>9</td>
<td>Gave big picture of how it works</td>
</tr>
<tr>
<td>10</td>
<td>Pretty useful as provide relevant things</td>
</tr>
<tr>
<td>14</td>
<td>Practice questions for referencing were good</td>
</tr>
<tr>
<td>15</td>
<td>Quite useful; lot of information I didn’t know of till then</td>
</tr>
<tr>
<td>19</td>
<td>Quite good if you read the instructions properly</td>
</tr>
<tr>
<td>21</td>
<td>Very useful; like the examples; being visual, makes it clearer &amp; easy to follow</td>
</tr>
</tbody>
</table>

**Question 2.** Participants were asked how, before the testing day, they would have attempted the activities in the testing sets. There were four versions of this question, each relating to the question set which the participant was given. Responses are below for each set and show that 9 of the 20 participants (45%) who responded to this question answered that they would have taken appropriate action, with 11 of the 20 participants (55%) choosing pathways which would not necessarily have led to results.

**Table 4: (set 1) Before today, how would you have found a listed journal article?**

3 of 7 participants it seems would have searched in an appropriate place, 2 would have asked for help, 1 stated ‘trial and error’ and 1 had not tried before.

<table>
<thead>
<tr>
<th>ID</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Information desk and ask for help</td>
</tr>
<tr>
<td>6</td>
<td>Used journal title and found it</td>
</tr>
<tr>
<td>7</td>
<td>Databases or library home page</td>
</tr>
<tr>
<td>8</td>
<td>Search in catalogue search box</td>
</tr>
<tr>
<td>14</td>
<td>Ask librarian</td>
</tr>
<tr>
<td>19</td>
<td>Trial and error</td>
</tr>
<tr>
<td>20</td>
<td>Not used journal articles before</td>
</tr>
</tbody>
</table>
Table 5: (set) 2 - Before today, where would you look for APA style?

3 of 5 participants stated they would use the Faculty’s Study Skills Handbook and/or Academic Skills seminar, and 2 stated they would Google for guidance.

<table>
<thead>
<tr>
<th>ID</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Print copy of LaTrobe Study Guides</td>
</tr>
<tr>
<td>4</td>
<td>Google 'referencing guides'</td>
</tr>
<tr>
<td>9</td>
<td>Mainly rely on booklet written by (lecturer) and seminar run by (lecturers)</td>
</tr>
<tr>
<td>10</td>
<td>Google it</td>
</tr>
<tr>
<td>16</td>
<td>Study guide</td>
</tr>
</tbody>
</table>

Table 6: (set 3) - Before today, how would you have found journal articles on a topic?

1 of 4 participants stated she/he would use the same method, 2 said they would use Library searching and Google and 1 stated ‘luck’.

<table>
<thead>
<tr>
<th>ID</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Same way</td>
</tr>
<tr>
<td>11</td>
<td>Library website, but mainly Google</td>
</tr>
<tr>
<td>12</td>
<td>Library search engine and Google</td>
</tr>
<tr>
<td>17</td>
<td>Luck</td>
</tr>
</tbody>
</table>

Table 7: (set 4) - Before today, how would you have evaluated whether an article was credible enough?

2 of 4 participants said they would trust an internet source if it was correlated to a journal, and 2 participants indicated before today they would ‘trust websites’ and ‘take as reliable’.

<table>
<thead>
<tr>
<th>ID</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Search 3-4 sites on Google and if information corresponds, take as reliable</td>
</tr>
<tr>
<td>13</td>
<td>Search journal title in library to confirm authenticity</td>
</tr>
<tr>
<td>18</td>
<td>If it was in a journal</td>
</tr>
<tr>
<td>21</td>
<td>Would trust websites</td>
</tr>
</tbody>
</table>
Question 3. Please comment on any aspects of using the health sciences information literacy modules?

Participants were given an opportunity to comment on any aspects of using the modules with particular aspects listed as prompts (see table below), but they could also comment on any other aspects. Not all 21 participants commented on all aspects listed or at all.

In total there were 110 comments with 62% falling in the positive range and 16% very positive (combined 78% positive or very positive). Those comments with more in the positive or very positive range were usefulness, helpfulness, design, content, AV media and language. Respondents were almost unanimously positive about content, finding it useful and helpful. AV multimedia was generally viewed positively (with positive comments on the animated video), and language was considered appropriate level, without too much jargon.

There were 2 neutral comments/suggestions.

The negative comments accounted for 18% of the total; with negative and very negative combined totalling 20%. The comments with the most responses in the negative range concerned navigation and in part, design. Problems were identified, in the design, which some found too busy and confusing leading to difficulties in navigation. Comments included: ‘too much information on page’, ‘overwhelming’, ‘module section didn’t stand out’, ‘needs clearer instructions’, ‘confused by all the links at the top’, ‘tabs at top not immediately obvious’, ‘easy enough if you read the instructions properly!’ Several people mentioned wanting a librarian led tutorial on using the modules, or expressed preference for personal rather than computer based teaching/learning.

Table 8: Tabulation of comments on aspects of using the modules

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Very Positive</th>
<th>Positive</th>
<th>Neutral/ Suggestion</th>
<th>Negative</th>
<th>Very Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Useful</td>
<td>6</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helpful</td>
<td>4</td>
<td>11</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td></td>
<td>11</td>
<td>1</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Navigate</td>
<td></td>
<td>7</td>
<td></td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Content</td>
<td>3</td>
<td>8</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>AV media</td>
<td>4</td>
<td>10</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td>1</td>
<td>13</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>18</td>
<td>68</td>
<td>2</td>
<td>20</td>
<td>2</td>
</tr>
</tbody>
</table>

Other comments were: three suggestions for face-to-face sessions (one from a ‘mature-age student who was unfamiliar with…computers’); a comment on the lack of clarity of voices in some videos; and a positive comment that the modules are good to come back to.
**Question 4.** What two things helped you the most when using the health sciences information literacy modules?

The 28 comments from the respondents about what was most helpful when using the modules can be grouped into themes as in table 9. Most noted were the navigational aids and the mention of particular content, followed by examples, exercises, visuals and videos.

**Table 9: What was most helpful**

<table>
<thead>
<tr>
<th>Response type</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Navigational aids - side bar, links, search boxes</td>
<td>9</td>
</tr>
<tr>
<td>Particular content - articles and databases including truncation, media articles, books/av, referencing, locating resources</td>
<td>8</td>
</tr>
<tr>
<td>Practical content - examples, exercises guides</td>
<td>5</td>
</tr>
<tr>
<td>Visuals, video</td>
<td>3</td>
</tr>
<tr>
<td>General comment – ‘easy to follow’</td>
<td>1</td>
</tr>
<tr>
<td>Miscellaneous – comments on circumstances</td>
<td>2</td>
</tr>
</tbody>
</table>

**Question 5.** What two things could be improved to make the health sciences information literacy modules easier to use?

The 25 comments from the respondents about what could be improved to make the modules easier to use can be grouped into themes as in table 9. Most noted were the design, layout, structure and content, with suggestions for face-to-face instructions on modules to get started and promotion in classrooms or workshops.

**Table 9: What things could be improved**

<table>
<thead>
<tr>
<th>Response type</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concerns about design, confusing layout, suggestions for structure</td>
<td>10</td>
</tr>
<tr>
<td>Suggestions for content</td>
<td>9</td>
</tr>
<tr>
<td>More/better instructions on how to use modules including suggestion that a face-to-face instructions by librarians would help to get started</td>
<td>2</td>
</tr>
<tr>
<td>Promotion of modules, more promotion in classrooms</td>
<td>2</td>
</tr>
<tr>
<td>Problems with linking to full-text articles (not a module issue)</td>
<td>2</td>
</tr>
</tbody>
</table>
Table 10: Modules - Two things that helped the most (Q2)

<table>
<thead>
<tr>
<th>ID</th>
<th>Comment</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Too rushed to appreciate usefulness</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>How to find book and AV aids</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>Finding items in database, different techniques (truncation etc.)</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>Find media articles and knowing what websites can be used</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>Having done it previously</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>More about different databases to help find relevant resources</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>Locating resources</td>
<td>0</td>
</tr>
<tr>
<td>11</td>
<td>Journal articles and databases</td>
<td>0</td>
</tr>
<tr>
<td>13</td>
<td>Way to locate journal articles and access databases</td>
<td>0</td>
</tr>
<tr>
<td>21</td>
<td>Helped with referencing</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Side-bar tutorials</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Highlighted links showing where to click</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Search boxes</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Links</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Links on pages to guide to another topic</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>Left hand column</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Tabs down left side</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Search box</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>Side link explaining how to find online journals</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>Videos</td>
<td>2</td>
</tr>
<tr>
<td>15</td>
<td>Visuals</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>Video</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>Practice exercises</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>Information page outlining how to use the pages</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>Listing of examples of references, then what they refer to</td>
<td>3</td>
</tr>
<tr>
<td>19</td>
<td>Step-by-step processes</td>
<td>3</td>
</tr>
<tr>
<td>20</td>
<td>Guides</td>
<td>3</td>
</tr>
<tr>
<td>21</td>
<td>Easy to follow</td>
<td>4</td>
</tr>
</tbody>
</table>
Table 11: Modules: 2 things that could be improved (Q 5)

<table>
<thead>
<tr>
<th>ID</th>
<th>Comment</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Time!</td>
<td>Misc</td>
</tr>
<tr>
<td>1</td>
<td>Information on home page is overwhelming</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Easier design</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Make more user friendly; sometimes confusing to find things</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Improved layout to make easier to read; not so cluttered</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Links at top confusing, maybe have all information on one page so it is easier to read through</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Easier design format</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>Some sort of login that marks which sections you’ve read/covered</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>Have a heading for peer-reviewed journals in the left hand column; otherwise you have to search internally to find this information</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>Confusing with all different subjects and then search engines</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>On ‘finding credible internet info’, video &amp; notes repetitive</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>End-note module</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>How to use different databases, difference bt’wn simple and advanced search</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>Gave up proceeding to find resources because did not know which database to go to for specific topic</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>More info on how to search for things</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>Greater knowledge on where to find related things in the library</td>
<td>2</td>
</tr>
<tr>
<td>14</td>
<td>Better explanation of how to find journals</td>
<td>2</td>
</tr>
<tr>
<td>17</td>
<td>Explain more about how to access articles via database</td>
<td>2</td>
</tr>
<tr>
<td>21</td>
<td>More about referencing</td>
<td>2</td>
</tr>
<tr>
<td>21</td>
<td>More about the library; great source, even though I’m young, I’d rather a book than a screen</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>Clearer instructions</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>Would be easier if shown how to use, so maybe lectures or facilitators could go thru how to access to make clearer</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Be made aware of them in class</td>
<td>4</td>
</tr>
<tr>
<td>18</td>
<td>Plenty of promotion in classes, not just 1st year</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Some articles couldn’t find online e-resource link</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>1 article didn’t appear when I attempted to click on the link</td>
<td>5</td>
</tr>
</tbody>
</table>
6. Summary of the Findings and Recommendations

6.1 Activity 1 – Findings and recommendations

Content

Finding: A majority of respondents of this usability testing found the ‘Can’t I just Google?’ video content to be appropriate, useful and relevant.

Recommendation
- Retain use of video in the modules and the concept overall. Investigate further opportunities where videos might be appropriate in the modules.

Finding: Suggestions for improvement related to further guidance with refining searches, more examples, accessing full text and subtitles. (Although in another part of the survey it was suggested that the video be shortened).

Recommendation
- Review content for referral/linkage to appropriate modules for further assistance. Investigate possibility of developing separate multimedia objects on suggested topics if not already available.

Physical Quality of Video

Finding: Respondents were almost equally split on the quality of the video, with some highlighting positives such as: ease of listening, clarity, speed, graphics and visuals. Others reported issues such as: technical problems, speed and clarity of speech and length.

Recommendation
- Review and test technical aspects of the video under a variety of conditions and with diverse populations.

Acting and Animation

Finding: There were two schools of thought on the acting and animation. Some participants responded positively to the acting and animation; commenting on ease of listening, to the point, slow, clear, helpful images, graphics and easy to relate to characters. However there were a few more comments which raised concerns about the use of animated characters, in particular the girl being ‘cold and her tone of voice not friendly’.

Recommendations
- Retain clarity, images, graphics and concept overall. Review use of animated characters in the light of comments and perhaps elicit further feedback from a variety of sources to inform on use of acting and animation.
6.2 Findings and Recommendations Sets 1-4 by Set and Step

Set 1 – Find the module to help with finding a known journal article citation. Then follow the guidance to get the full text article

Findings – choice of module (Set 1)

1. The module 'Finding items on a resource list' is not always recognised as a tool which will help students find a single journal article from a known citation

Recommendations – choice of module:

- Retain the module title 'Finding items on a resource list', however update the module 'Finding journal articles by topic' and rename to 'Finding journal articles'. Split the module into 'Finding journal articles when you know the citation' and 'Finding journal articles by topic'. This creates a duplication of some content but aiming to avoid confusion.
- Investigate ways of renaming the health sciences modules, so they are not confused with the ‘Health Sciences’ Library subject guides (both listed on the library guides page)

Findings – appropriate pathway (Set 1)

1. It is beneficial to have internal links to the following page in the modules

2. Top tabs are not seen as an obvious pathway through the modules

Recommendations 1-2 – appropriate pathway:

- Add internal links to subsequent boxes in all modules, to have a second option in case they miss the tabs.
- Consider wherever possible to put as much information in a single box, so that student can scroll rather than linking off to another box.
- First page of “Finding items on a resource list” update the page that shows the list, and rename as “Example of Resource List” more prominently
- Investigate reducing the amount of text in the modules where possible.

3. Participants attempted to use the left menu to navigate within the module

Recommendations 3 – appropriate pathway:

- Investigate module pathways and review all titles and headings to improve understanding of the pathways.
4. The finding journal article citation multimedia item is a useful tool

Recommendations 4 – appropriate pathway:

- Retain and update the journal article citation multimedia item
- Look for more opportunities to add instructional videos where appropriate
- Review all instructional videos for quality

Findings – journal title level (Set 1)

1. Most participants (5 of 6) got to (even if eventually) the journal title level in the Library catalogue, although they didn’t all use the guidance in the modules

Recommendations 1 – journal title level:

- Retain Library website entry point ‘Journal Titles’

Findings – article full text (Set 1)

1. It appears that some students have difficulty interpreting the Library catalogue journal title search result, as shown by participants who did not recognise the difference between the print copy record and electronic record

Recommendations 1 – article full text:

- Investigate the possibility of the journal title search result displaying with the electronic resource record at the top of the list and print copy placed second.
- Investigate the possibility of replacing the format type from [electronic resource] to online or full text, or even further information to trigger awareness of the fact that the article issues and full text of the articles are available behind the link

2. Participants, who got to the journal title level in the Library catalogue (5 of 6), did not necessarily successfully achieve access to the full text where available (2 of 6)

Recommendations 2 – article full text:

- Update any screen dumps in the modules to remove the LibXplore search box which seems to create confusion
- Databases by subject area: investigate removing the check boxes and LibXplore search box
- Update the Google cartoon to edit out the LibXplore search.
Set 2 - Find the module to help write out a reference in correct APA style, within that module find an appropriate example, and then use that information to write the citation correctly

Findings – choice of module (Set 2)

1. 'Referencing with APA’ is a recognisable label as being relevant to this type of task

   Recommendations – choice of module:
   - Retain the module title: ‘Referencing with APA’

Findings – appropriate pathway (Set 2)

1. It is beneficial to have in-text links within the boxes as an alternative path to the top tabs

   Recommendations – appropriate pathway:
   - Review placement and links to ‘Examples’ content
   - Review pathways from the main page of this module to improve alternative pathways

2. It is beneficial to have the main Faculty source (a clearly recognisable tool) as a link in a prominent place

   Recommendations – appropriate pathway:
   - Retain in-text link to study skills handbook (Pavlidis, 2009)

Findings – follow guidance to list in APA style (Set 2)

1. Most students found an appropriate example to model via links in the modules and were able to list a citation in at least partly correct APA style

   Recommendations – follow guidance to list in APA style:
   - Review examples for ease of use e.g. journal article example is a supplement; consider replacing
   - Enhance examples by creating boxes around them
   - Provide feedback to author of study skills handbook regarding the nature of participants’ use of this tool
Findings – choice of module (Set 3)

1. 'Finding journal articles on a topic’ is a recognisable label as being relevant to this type of task

Recommendations – choice of module:

- Investigate renaming ‘Finding journal articles by topic’ to ‘Finding journal articles’
- Enhance this module and divide into:
  - ‘Finding journal articles when you know the citation’
  - ‘Finding journal articles by topic’.
  - (this creates a duplication of some content but aims to prevent confusion)

Findings – appropriate pathway (Set 3)

1. The pathway through the module was not clear in the case of this particular task which may be due to placement, labels, design or other

Recommendations – appropriate pathway:

- Review or remove use of sub tabs
- Consider putting as much information as possible in a single box so that students can scroll rather than linking off to another box
- Review vital links and pathways in relation to size and clarity
- Investigate use of multimedia objects to enhance clarity of the stepped process
- Reduce module density and text and improve layout

Findings – Follow guidance to select a database (Set 3)

1. Instructions in the modules on choosing and accessing a database did not effectively guide the participants to the selection and use of an appropriate database

Recommendations – Follow guidance to select a database:

- Review guidance in modules relating to selecting & searching databases to find journal articles by topic
- Review the explanation of databases in Libguides
- ‘Journal Articles and Databases’ is noted in the practice exercises, a student used this guidance and got confused with the tab titles on the Library home page. Update this instruction
- Remove LibXplore search box from the screen shot in search databases content
- Consider changing ‘Articles via Databases’ to ‘Journal articles via databases’
Findings – Follow guidance to achieve a list of articles (Set 3)

1. *Instructions in the modules to access articles from a Library database did not effectively guide the participants to access a relevant list of articles by searching an appropriate database*

Recommendations – Follow guidance to achieve a list of articles:

- Remove the LibXplore search box on the databases search screen in the Library website
- Review the ‘Can’t I just Google?’ video to remove the section showing the LibXplore search box
Set 4 - Find the module to help determine the credibility of a website and show what they've found by writing down 2 points related to credibility

Findings – choice of module (Set 4)

1. ‘Finding Credible Internet Information’ is a recognisable label as being relevant to this type of task i.e. someone looking for guidance on what criteria to use

   Recommendations – choice of module:
   - Retain the module title: ‘Finding credible internet information’

Findings – appropriate pathway (Set 4)

1. Both top tabs and links in the first page led participants toward an appropriate path, however navigating to content beyond that appeared problematic. Sub tab information was not utilised on the whole

   Recommendations – appropriate pathway:
   - Retain the ‘Credibility’ tab and ‘more information on credibility’ link
   - Review the use of sub tabs – perhaps putting more content on a page or a link to sub tab content in a clear place
   - Redesign the main page to allow for multiple access points to top tabs

Findings – content within the module (Set 4)

1. The content of the credibility criteria information is clear enough for most participants in this testing to read, absorb and note (hence comments above, with visuals and examples seen to be useful)

   Recommendations – content within the module:
   - Retain the use of: clear explanation, examples and other visuals
6.3 Findings relating to steps - cross set

As each of the sets was analysed to the degree of what action participants took at particular steps, it is useful to look overall at the percentage of achievement relating to the steps, and therefore the point at which the achievement level changed.

Module choice
Almost three quarters (71%) of the participants chose the correct module (although in some cases not immediately). This result indicates that on the whole, module labels are appropriate; however there is room for improvement.

<table>
<thead>
<tr>
<th>Correct choices</th>
<th>Set 1</th>
<th>Set 2</th>
<th>Set 3</th>
<th>Set 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 of 6</td>
<td>4 of 5</td>
<td>4 of 5</td>
<td>4 of 5</td>
<td>15 of 21</td>
<td></td>
</tr>
</tbody>
</table>

![Module Choice](image)

I.e. those participants arrived at the place in the modules where the specific guidance was related to the activity. Other pathway aspects such as, lack of use of sub tabs or tabs is not reflected in this figure.

Appropriate pathway
67% of the participants took an appropriate pathway through the modules. This result indicates that the ability to navigate through the modules is satisfactory to a point, but needs major improvement.

<table>
<thead>
<tr>
<th>Appropriate pathway</th>
<th>Set 1</th>
<th>Set 2</th>
<th>Set 3</th>
<th>Set 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 of 6</td>
<td>4 of 5</td>
<td>4 of 5</td>
<td>4 of 5</td>
<td>14 of 21</td>
<td></td>
</tr>
</tbody>
</table>

![Appropriate Pathway](image)
Follow the guidance – part 1
Just over half (57%) of participants appeared to follow the guidance in the modules when looking at their actions after viewing the content. This result indicates that the content and delivery of content is only moderately effective in assisting participants to follow appropriate action in the initial step of a two step task, or the only step of a simpler task.

<table>
<thead>
<tr>
<th>Set</th>
<th>Follow the guidance pt 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Set 1</td>
</tr>
<tr>
<td></td>
<td>2 of 6</td>
</tr>
</tbody>
</table>

Follow guidance - Part 1

Correct: 57%
Incorrect or not used: 43%

Follow the guidance – part 2
In sets where there was an extra step, only 27% of participants, appeared to follow the guidance in the modules. The most dramatic reduction appears in Set 3, where only 1 participant was able to complete the activity successfully. Both sets 1 and 3 were more complex in terms of task than the other sets, with set 3 providing the greater challenge (finding journal articles on a topic). This result indicates that the content and delivery of content when extra steps are involved, are only effective in a small number of cases.

<table>
<thead>
<tr>
<th>Set</th>
<th>Follow guidance pt 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Set 1</td>
</tr>
<tr>
<td></td>
<td>2 of 6</td>
</tr>
</tbody>
</table>

Follow guidance - Part 2

Correct: 27%
Incorrect or not used: 73%
6.4 Findings & recommendations – Brief feedback survey

Use of the modules prior to the testing
Finding: A majority (71%) of the participants in the usability testing had used the modules before and 29% had not.

Recommendation:
- Investigate ways to promote the modules further via: workshops, lectures, an LMS discussion board, facilitator training, handouts, business cards or bookmarks etc.

Practice exercises
Finding: The practice exercises are considered to be useful to the participants who stated they had used them (8 of 21, 38%).

Recommendation:
- Consider increasing practice exercises across the modules where relevant, and improving those which exist.

Prior action for activities
Finding: When asked what action would have been taken to do a particular task prior to the testing day for particular activities, responses show that 9 of the 20 respondents to this question (45%) answered that they would have taken appropriate action, with 11 of the 20 respondents (55%) choosing pathways which would not necessarily have led to results.

Recommendation:
- Investigate ways to promote the modules further via: workshops, lectures, an LMS discussion board, facilitator training, handouts, business cards or bookmarks etc

Comments on the modules - general
Finding: The majority of the general comments were positive. Participants commented positively or very positively (combined comments 78%) about the modules in terms of: usefulness, helpfulness, design, content, AV media (including animated video) and language. Participants commented negatively or very negatively (20% combined) about the modules in terms of: navigation and in part, design.

Recommendation:
- Review the navigation and design aspects across modules.

Comments on what helped most
Finding: Navigational aids, certain content, examples, exercises, visuals and videos are considered to be the aspects that helped the most according to the respondents.

Recommendation:
- Review the modules, retaining aspects which were seen to help: navigational aids, certain content, examples, exercises, visuals and videos

Comments on what things could be improved
Finding: Design, layout, structure, content, suggestions for face-to-face instructions on modules to get started, and promotion in classrooms/workshops were considered to be the aspects that could be improved according to the respondents.

Recommendation:
- Review the aspects of the modules which participants suggested could be improved: design, layout, structure and content.
- Investigate ways to promote the modules further via: workshops, lectures, an LMS discussion board, facilitator training, handouts, business cards or bookmarks etc
6.5 Recommendations grouped by Modules, Library Website and Multimedia items

Recommendations regarding the Modules:

Modules (Activity 1)
- Retain the use of video in the modules and the concept overall. Investigate further opportunities for the appropriate use of video in the modules.
- Review the content for referral and/or linkage to other relevant boxes or modules for further assistance.
- Investigate the possibility of developing separate multimedia objects on suggested topics.
- Review and test technical aspects of the video under a variety of conditions and with diverse populations.
- Retain clarity, images, graphics and concept overall.
- Review the use of animated characters in the light of comments and perhaps elicit further feedback from a variety of sources to inform on use of acting and animation.

Modules (Set 1)
- Retain the module title ‘Finding items on a resource list’, however update the module ‘Finding journal articles by topic’ and rename to ‘Finding journal articles’. Split the module into ‘Finding journal articles when you know the citation’ and ‘Finding journal articles by topic’. This creates a duplication of some content but aims to avoid confusion.
- Investigate ways of renaming the Health Sciences modules, so they are not confused with the ‘Health Sciences’ Library subject guides (both listed on the Library guides page).
- Investigate reducing the amount of text in the modules where possible.
- Add internal links to subsequent boxes in all modules, to have a second option in case they miss the tabs.
- Consolidate information into as few boxes as possible, so that students can scroll rather than linking off to another box.
- First page of ‘Finding items on a resource list’ update the page that shows the list, and rename as ‘Example of Resource List’ more prominently.
- Investigate module pathways and review all titles and headings to improve understanding of the pathways.
- Update any screen dumps in the modules to remove the LibXplore search box which seems to create confusion.

Modules (Set 2)
- Retain the module title ‘Referencing with APA’.
- Retain link to the Study Skills Handbook.
- Provide feedback to the author of Study Skills Handbook regarding the nature of the participants’ use of this tool.
- Review placement and links to the ‘Examples’ content.
- Review pathways from main page of this module to improve alternative pathways.
- Review examples for ease of use e.g. journal article example is a supplement, consider replacing.
- Enhance examples by creating boxes around them.
Modules (Set 3)

- Investigate renaming ‘Finding journal articles by topic’ to ‘Finding journal articles’
- Retain and enhance this module and divide into:
  - ‘Finding journal articles when you know the citation’
  - ‘Finding journal articles by topic’
- Review or remove the use of sub tabs
- Consolidate information into as few boxes as possible, so that students can scroll rather than linking off to another box.
- Review vital links and pathways in relation to size and clarity
- Reduce module density and text and improve layout
- Review guidance in modules relating to selecting & searching databases to find journal articles by topic
- Review explanation of the databases in Libguides
- ‘Journal Articles and Databases’ is noted in the practice exercises, 1 student used this tab and got confused with the tab titles on the Library home page. Update this tab
- Remove the LibXplore search box from the screen shot in ‘search databases’ content

Modules (Set 4)

- Retain the module title ‘Finding credible internet information’
- Retain the ‘Credibility’ tab and ‘more information on credibility’ link
- Review the use of sub tabs – perhaps putting more content on a page or a link to sub tab content in a clear place
- Redesign the main page to allow for multiple access points to top tabs
- Retain the use of: clear explanation; examples & other visuals

Modules (Brief feedback survey)

- Investigate ways to promote the modules further via: workshops, lectures, an LMS discussion board, facilitator training, handouts, business cards or bookmarks etc.
- Consider increasing practice exercises across the modules where relevant, and improving those which exist
- Review the navigation and design aspects across all modules
- Review the modules for aspects which were considered needing improvement: design, layout, structure and content
- Review the modules, retaining aspects which were seen to help: navigational aids, certain content, examples, exercises, visuals and videos

Modules (overall)

- Review all the modules (not just those in this usability testing) to apply recommendations where relevant

Recommendations regarding Multimedia items:

Multimedia items (Set 1)

- Retain and update the journal article citation multimedia item
- Look for more opportunities to add instructional videos where appropriate
- Review all instructional videos for quality
- Update the Google cartoon to edit out the LibXplore search box.
Library Health Sciences Information Literacy Modules: usability testing report 2009

Multimedia items (Set 3)
- Investigate the use of multimedia objects to enhance clarity of the stepped process
- Review ‘Can't I just Google?’ video to remove section showing LibXplore search box

Multimedia items (overall)
- Review all the multimedia items in the modules (not just those in this usability testing) to apply recommendations where relevant
- Look for more opportunities to add instructional videos where appropriate

Recommendations regarding the Library Website:

Library Website (Set 1)
- Retain the Library website entry point ‘Journal Titles’
- Investigate the possibility of the journal title search result displaying with the electronic resource record at the top of the list and print copy placed second
- Investigate the possibility of replacing the format type from [electronic resource] to online or full text, or even further information to trigger awareness of the fact that the article issues and full text of the articles are available behind the link
- Databases by subject area: investigate removing the check boxes and LibXplore search box

Library Website (Set 3)
- Consider changing ‘Articles via Databases’ to ‘Journal articles via databases’
- Remove the LibXplore search box on the databases search screen in the Library website

6.6 Overall Findings

71% participants chose the correct module, although in some cases not immediately. This result indicates that on the whole, module labels are appropriate however there is room for improvement. 67% of participants took an appropriate pathway through the modules, this indicates that the ability to navigate through the modules is satisfactory to a point but needs major improvement. 57% of participants appeared to follow the guidance in the modules, which indicates that the content and delivery of content is only moderately effective in assisting participants to follow appropriate action in the initial step of a two step task. Where there was an extra step or more complex task, only 27% of participants appeared able to follow the guidance in the modules to complete the task.

Top tabs and sub tabs were not always seen as an obvious pathway through the modules, and this was a common finding across all sets. A positive finding indicated it was beneficial to have internal links to the following page within the modules (this feature was not common throughout all of the modules). Participants commented on the usefulness and relevancy of visuals and multimedia video content across all sets. Another important finding showed that the instructions in the modules on choosing and accessing a database did not effectively guide the participants to the selection and use of an appropriate database, and eventually lead the participants to access a relevant list of articles.
7. Conclusion

It has been essential to ensure that first year health sciences students have access to the Library’s resources, and, to maximise efficiency in their information seeking activities, have the highest quality training modules to guide them. The modules were developed in collaboration with the Health Sciences Faculty staff and by the cross campus faculty librarians. The modules include guidance on library research skills pertaining to their task assessments in their enquiries for the first year of study.

Usability testing of the modules was carried out, as a critical step in the ongoing quality improvement process for promotion of information literacy online training and guidance. It was imperative to conduct this testing to ensure that the modules remain effective and efficient for this cohort in the online environment. To add to the complexity, testing was performed on four of the modules, thereby requiring four discrete testing sets. Within each set consideration was applied to three important themes: finding the correct module, finding an appropriate pathway within the module, and following the guidance in the module to complete the task. Frequency and severity of issues identified within each testing set were analysed to assist in prioritising recommendations for improvement, as well as highlighting what worked well within the modules.

Ideas gleaned from the current literature were crucial to success, and these included: attention to the wording and development of the tasks and questions; structuring the tasks to ensure testing of the modules, and not the participants’ research skills; highlight not only the ease of use of the website, but the usefulness as well (Vaughn and Callicot, 2004); using a small sample size for user testing; and enabling the participant to undertake the testing without librarians present in the room (Benjes and Brown, 2000). Camtasia video and audio recording was used to facilitate this process.

The findings and recommendations were initially grouped by testing set, then to assist the improvement process, amalgamated and grouped according to the modules, multimedia items and the Library website. This experience with task-based usability testing has been instrumental in providing further enhancement and improvement to the information literacy modules, and encouraged by the success of this testing, further plans are underway to repeat this testing in 2010.

8. Acknowledgements

Sincere appreciation to the Health Sciences Library Evaluation Working Group members; the Health Sciences Faculty Librarians at all campuses; the Library Web Coordinator Anthony Flack; other expert Library staff who have assisted in this project; and the CTLC (Curriculum Teaching & Learning Centre).
9. References


Pavlidis, M. (2009). Target your skills: optimise your learning. Online handbook, La Trobe University, Faculty of Health Sciences.

10. Appendix 1 – Usability Testing Documents

This appendix includes the student guidelines/instruction sheet - common to all four sets; the four separate testing documents; and the brief feedback survey, also common to all four sets.

Health Sciences Information Literacy Modules
Usability Feedback (Common to all four sets)

Student guidelines/instructions

Thankyou for participating in this usability feedback. The purpose of this feedback is to find out how we can improve our tutorials and services in the future.

It is not in any way a test of your knowledge or skills. It is an evaluation of the modules.

The results will remain anonymous

What will occur?
The staff member will turn on the Camtasia recorder and leave you to do the activities Your screen movements and comments will be recorded.

Please vocalise what you are thinking as much as possible continuously – commenting on your actions, even any frustrations.

Please scroll and mouse and click as freely as you wish. The recording won’t be affected.

After 15 minutes the staff member will return and give you a brief feedback survey which should take approximately 5 minutes.

You can alert the library staff member if you finish before the 15 minutes is up.
Your screen is at the Health Sciences Information Literacy Modules homepage which is: [http://latrobe.libguides.com/health_sci](http://latrobe.libguides.com/health_sci)

There are three activities. Please do them in order.

**ACTIVITY ONE**
1. Go to the left menu and click on “Can’t I just Google”
2. View the video. It will start automatically & take 3 mins. Rewind if you need to.
3. What works well with this video?
4. What could be improved with this video?

**ACTIVITY TWO**
You have been given this citation as an item on your resource list:


Find the instructions for searching the library collection for this item.

**ACTIVITY THREE**
Read or view the information in the instructions, you found in activity two, then locate the item in the library & get the full text up on the screen.

Reminder: this is not a test. Please vocalise your thoughts, including any issues. Alert the staff member when you feel you have done the activities

Staff to fill in: Date: _________ Number: _____ Campus: _____________
Your screen is at the Health Sciences Information Literacy Modules homepage which is: http://latrobe.libguides.com/health_sci

There are three activities. Please do them in order.

**ACTIVITY ONE**
1. Go to the left menu and click on “Can’t I just Google”
2. View the video. It will start automatically & will take 3 mins. Rewind if need to.
3. What works well with this video?

4. What could be improved with this video?

**ACTIVITY TWO**
You have found this book:

Politics and budgeting in the World Health Organization by Francis W. Hoole. Published in Bloomington by Indiana University Press, 1976.

You want to use this in your assignment, you know you need to cite it in APA style but you are not sure how to do this.

Find the page in the modules with the guide to this style.

**ACTIVITY THREE**
Write down the citation for the above book in APA style (underline any words that should be in italics)

___________________________________________________________
___________________________________________________________
___________________________________________________________

Reminder: this is not a test. Please vocalise your thoughts, including any issues. Alert the staff member when you feel you have done the activities

Staff to fill in: Date: ________  Number: ___  Campus: ____________
Your screen is at the Health Sciences Information Literacy Modules homepage which is: [http://latrobe.libguides.com/health_sci](http://latrobe.libguides.com/health_sci)

There are three activities. Please do them in order.

**ACTIVITY ONE**
1. Go to the left menu and click on “Can’t I just Google”
2. View the video. It will start automatically & will take 3 mins. Rewind if need to.
3. What works well with this video?
4. What could be improved with this video?

**ACTIVITY TWO**
Find the guidance in the modules on finding journal articles on a topic and read or view anything that looks relevant.

**ACTIVITY THREE**
Follow the guidance you found in activity two, to find 3 journal articles on diabetes via the library.

Activity three is completed when you have found three relevant journal articles listed. You do not need to view the full text of the articles

Reminder: this is not a test. Please vocalise your thoughts, including any issues. Alert the staff member when you feel you have done the activities.

Staff to fill in: Date: __________ Number: ___ Campus: ____________
Health Sciences Information Literacy Modules
Usability Feedback: Set 4

Your screen is at the Health Sciences Information Literacy Modules homepage which is: http://latrobe.libguides.com/health_sci

There are three activities. Please do them in order.

**ACTIVITY ONE**
1. Go to the left menu and click on “Can’t I just Google”
2. View the video. It will start automatically & will take 3 mins. Rewind if need to.
3. What works well with this video?

   ________________________________________________________________

4. What could be improved with this video?

   ________________________________________________________________

**ACTIVITY TWO**

You have found a website that you think would be useful for your academic assignment. You need to determine if this website is credible.

Go to any module/s that might give you advice on that

Which module/s did you view?

   ________________________________________________________________

**ACTIVITY THREE**

Using the content of the module/s write down 2 points relating to judging the credibility of websites.

   ________________________________________________________________

   ________________________________________________________________

Reminder: this is not a test. Please vocalise your thoughts, including any issues. Alert the staff member when you feel you have done the activities.

Staff to fill in: Date: ___________ Number: ___ Campus: _____________

45
1. Have you used the health sciences information literacy modules before today? 
   Yes □ No □ Go to 2.

   If yes, Have you used the practice exercises? Yes □ No □ Go to 2.

   If yes, How useful were they?
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

2. Before today, how would you have found a specifically listed journal article from a reading or resource list, in the library?
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

3. Please comment on any aspects of using the health sciences information literacy modules?
   E.g. usefulness
       helpfulness
       design
       navigation
       content
       multimedia (video/audio)
       language
       other?
   __________________________________________________________
   __________________________________________________________

4. What two things helped you the most when using the health sciences information literacy modules?
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

5. What two things could be improved to make the health sciences information literacy modules easier to use?
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

Please use other side of page if you need more space, Thankyou.

Staff to fill in: Date: ___________  Number: _____  Campus: ___________
Health Sciences Faculty staff experience of the Library involvement in the Common First Year:

Online survey report

4 December 2009

Claire Brooks
Jenny Corbin

On behalf of the Library Health Sciences Evaluation Working Group
Jenny Corbin (coordinator) Claire Brooks Eva Fisch Sharon Karasmanis Fiona Salisbury Chris Wanklyn
Introduction

As part of the CFY (Common First Year) Library Curriculum Reform Project, the Library sought feedback from the Health Science Faculty staff about the role and impact of the Library support for Common First Year students. The Library ran an online, cross campus Health Sciences Faculty staff survey between the 14th and 26th October 2009. Fifteen staff members of the Health Sciences Faculty completed the online survey.

The survey consisted of four parts. The first item consisted of ten statements with Likert scale options in which respondents were asked to rate their level of agreement or disagreement. There was also a ‘not applicable’ option. There were three open-ended questions about what worked, what could be improved, and possible suggestions about Library support for this cohort’s 2nd year, 2010. Additional comments were also welcome. Overall the Faculty feedback was strongly positive.

Limitations

The timing of the online survey was at the close of semester, but still at a relatively busy time for Faculty staff. Therefore it is possible that time pressures may have not allowed some staff to participate.

Two participants consistently answered disagree or strongly disagree for the ten statements, even though the answer for those participants about being aware of the Library’s role was also answered strongly disagree. So the question outstanding is: if the respondents were unaware of the Library’s role, how could the other questions have been answered in an informed manner? The design of the questions should have perhaps taken this into account and that for any respondent answering that they were unaware, that the other questions were then not applicable.

Due to timing and workload issues within the Faculty, Library staff were unable to undertake focus groups or interviews (targeted to particular key staff), which had originally been planned to provide the qualitative data. This would have been preferable to enable the teasing out of issues further.

Results

There were fifteen responses. The majority of responses in relation to the level of agreement and disagreement to the ten statements are listed below. All statements except for statement eight were answered by all fifteen respondents. The comments from the other questions are subsequently summarised.

Survey Item 1:

Please rate your level of agreement or disagreement with the following (10) statements

1. I am aware of the role of the Library in supporting the CFY
   86.7% (13 of 15) of respondents rated this statement either strongly agree or agree

2. Library staff were helpful during the planning stage of CFY
   60% (9 of 15) of respondents rated this statement either strongly agree or agree

3. Library staff communicated in a timely and appropriate manner during the development of the CFY
   60% (9 of 15) of respondents rated this statement either strongly agree or agree

4. The Library holds useful and relevant electronic books for the CFY
   80% (12 of 15) of respondents rated this statement either strongly agree or agree
5. **The Library has sufficient multiple copies of materials for CFY**
   40% (6 of 15) of respondents rated this statement either agree or disagree with strongly agree and agree accounting for 33.4% (5 of 15) and disagree and strongly disagree accounting for 20% (3 of 15) and 1 not applicable.

6. **Embedding of information literacy skills in a subject (for assessment) was beneficial to students**
   60% (9 of 15) of respondents rated this statement either strongly agree or agree

7. **The online information literacy modules were useful for teaching necessary skills to students**
   66.7% (10 of 15) of respondents rated this statement either strongly agree or agree

8. **The Library staff responded well to the needs of CFY students**
   78.6% (11 of 14) of respondents rated this statement either strongly agree or agree

9. **The Library staff responded well to the needs of CFY staff**
   73.4% (11 of 15) of respondents rated this statement either strongly agree or agree

10. **The Library provided a valuable group work space for CFY students**
    53.4% (8 of 15) of respondents rated this statement either strongly agree or agree and 33.3% (5 of 15) of respondents rated this statement neither agree nor disagree with disagree or strongly disagree accounting for 13.4% (2 of 15) of responses.

**Discussion**

Thirteen of the fifteen staff were overwhelming positive about the Library/Faculty interaction citing in particular information literacy online assistance; electronic resources; Library staff and responsiveness to student needs; and communication initiated by the Library in relation to the CFY.

The highest average rating was 4.2 out of a possible 5, for the question 'I am aware of the role of the Library in supporting the CFY'. Two people stated they were unaware of the Library role in support of the CFY, and these two individuals consistently disagreed with all statements relating to the role of the Library in relation to the CFY.

The lowest rating was 3.36 for 'The Library has sufficient multiple copies of materials for CFY' and this view was supported by a number of comments about students needing to access key texts. 40% of responses indicated neither agree nor disagree with the statement. (Note: the Library records do not support the view there were insufficient copies of materials, but it is possible either the staff believed there were insufficient copies, or that students were unable to locate the multiple copies that were available, and in some cases not borrowed.)

The critical statement ‘Embedding of information literacy skills in a subject (for assessment) was beneficial to students’ yielded mixed results. The average rating was 3.77, with 60% agreeing or strongly agreeing, but two respondents saying ‘not applicable’, and four others allocated to the ‘neither agree nor disagree’, and ‘disagree and strongly disagree’.

It would be valuable to tease out this complex statement and associated issues more thoroughly as the concept is strongly supported by the research literature, and forms a part of the information literacy strategy. Perhaps the comments "I'm not sure about some of the questions above as I wasn't directly involved with some aspects of the program", and "I really can't comment" suggest that the nature of the Library involvement, especially related to information literacy was not transparent enough for all academic staff. It should also be noted that the embedding of information literacy tasks was only explicitly targeted at one subject each semester.
Survey Item 2:

In your experience …. What worked well in the Library’s support to Health Sciences Common First Year?

Comment on any aspect of Library support and involvement for example: staffing; Library services; information literacy assessment; collection development (e-books, audio-visual, journals); online modules (http://latrobe.libguides.com/health_sci) or any other aspects.

The responses to this question and the issues raised can be categorised as follows:

**Worked:**
- Information literacy (4) “The information literacy information is excellent” and “Information literacy was very good – more emphasis maybe required on this area because students continued to make errors…”
- Electronic resources (2) “e-chapters and journal access are excellent”; and “Access to journals is very appropriate”
- Library Discussion Board (2) “Discussion board on LMS seemed to be well appreciated by students”
- Approachability of staff (2) “Approachability of the staff, students reported how staff were very willing to help”
- “Faculty librarians and other library staff” (4)
- Communication…initiated by library “Good communication between library and CFY campus coordinator, initiated by the library was invaluable”

Survey item 3:

In your experience …. What could be improved in the Library’s support to Health Sciences Common First Year?

There were a number of responses to the request for suggestions for future improvement ranging from:
“Think the library did a great job - the on-line literacy resources were of particular (sic) value”
“The library staff are always extremely helpful” and “Implement library workshops to ensure students (& facilitators) are allocated time to better utilise the modules. There is so much material for staff and students to absorb in CFY it cannot all be done. So library modules need to be prioritised (sic)”.

The responses can be categorised as follows:

**Could be improved:**
- Librarians present at a lecture (2)
- Increase texts (3)
- List of available resources
- Library workshops for facilitators and students
- Space for group work
- Consistency in LMS sites to promote Library help

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1 Since collections usage data for selected prescribed texts does not reflect a lack of multiple copies, improvement in instructions on recognising additional copies in the catalogue may be required for either staff or students
Survey item 4:

Given your experience with the Common First Year, do you have any suggestions for how the Library can best support Health Sciences 2nd year students in 2010 or for other faculty activities. What could we do differently? What will you do differently?

There were a number of helpful ideas which will be implemented in future such as promoting scholarship of La Trobe staff more effectively, and possible additional Library workshops, as well as a re-focus on the needs of second and later year students.

Support for 2nd year students in 2010?

- Similar support for information literacy (2)
- Further guides on database searching in workshops (2)
- Make them take advantage of what you offer!
- Plenty of copies and space

Conclusion

Overall the feedback from Faculty staff about the Library's support to CFY was very positive. The feedback from the faculty staff also helps the Library reflect on internal processes and communication as well as emphasising the importance of clear and timely communication with faculty staff.

It is clear by this statement “Make them take advantage of what you offer!” that further explicit promotion of Library support would be of benefit and it is evident that although there was much positive feedback about Library staff, information literacy and library resources, there is room for further refinement of Library support to CFY, which will be the focus for the 2010 cohort of 1st year and also 2nd year health sciences students.

Recommendations

1. Consult and collaborate with Faculty staff to identify mechanisms which will increase awareness amongst both students and staff, of the information literacy program and library resources and support for 2010
2. Review Library Q & A sessions with regard to labelling and marketing so that ‘at risk’ students will maximise use of available support
3. Review and improve guidance in the Information Literacy modules to maximise effectiveness
4. Continue to work with Faculty staff to further refine the embedding of information literacy skills in CFY
5. Continue to seek feedback from faculty staff through surveys and particularly focus groups or structured interviews with key personnel to assist in the improvement of the Library response to CFY
Appendices – Reusable learning objects

Appendix 13 - Literature review and environmental scan

This literature review / environmental scan is a selective list of resources from 2000 to date.

These resources informed the working group about the use, practical applications of, and reasons for the use of reusable learning objects and issues related their management.

1 Re-usable learning objects – General
2 reusable learning objects and Information Literacy
3 Practical examples
4 Student experiences/use
5 Management of reusable learning objects

1. Re-usable learning objects – General


Abstract:
This work introduces the concept of an Object-Oriented Learning Object (OOLO). The study goes on to examine existing learning object design and development models as well as relevant tools and assesses the ability of these models and tools to implement the OOLO concept. The study concludes by summing up the benefits that can be realised by the development of OOLOs and by outlining the work that needs to be done for achieving the application of Object-Oriented techniques to learning objects.


Abstract:
Shows how to create and implement a reusable learning objects (RLO) strategy that is flexible enough to accommodate individual needs or use across a global organisation. The book also helps evaluate the level of changes you will need to account for during the transition to RLO.


Abstract:
Clyde discusses the significance of digital learning objects in relation to the universities and to continuing professional education or workplace learning - areas where funding seems to be available for development, on the basis of assumed gains or efficiencies. The concept of learning objects is based in both instructional technology and computer science, and while they may be “chunks” of content, they may also be simulations, communication tools, assessments activities and learning management tools.


Abstract:
Discusses the Iconex project at the University of Hull and how it was funded to demonstrate the value of small, portable, pieces of digital content in assisting student learning. The project aimed to create a repository of interactive Learning Objects, many of which are already available for use and reuse. This repository is intended to stimulate cross-fertilisation between disciplines to develop generic views of types of interaction, and to encourage the reuse of learning objects. In this paper, the authors explored some of the more wide-ranging issues which have arisen during the project, and attempt to demonstrate why consideration of Learning Objects and their role is relevant to all librarians.

Abstract:
The purpose of the paper is to share the types, uses, and students' recommendations about reusable digital learning objects at Northwest Missouri State University, which can be used or adapted by other libraries in both online and on-ground information literacy instruction environments. The paper provides suggestions for developing and evaluating learning objects. This includes successful applications of digital learning objects in traditional and online information literacy classes. It shares easy to incorporate learning objects that can be used in tutorials or on-ground bibliographic sessions and includes a student survey about reuse of learning objects, analysis of survey results, and suggestions for survey improvement.

2. Re-usable learning objects and information literacy


Abstract:
This article describes and presents various high quality interactive information literacy digital learning objects. It details suggestions from the literature to guide development of Web 2.0 tools in order to produce to supplemental learning modules for information literacy programs. The article recommends best practice examples.

Kurubacak, Gulsun 2007 Building knowledge networks through project-based online learning: a study of developing critical thinking skills via reusable learning objects, *Computers in Human Behavior*, 23 (6), p 2688-2695.

Abstract:
This article discusses the promotion of critical learning skills through the use of reusable learning objects from global online resources.


Abstract:
This paper aims to describe the continuing effort to develop a repository of teaching materials for sharing and reuse in library and information science (LIS) schools in Asia. It also aims to propose a framework for carrying out a user study to validate the taxonomy and metadata, and evaluate how they support the reuse of teaching materials in four Asian countries. This paper makes contributions in several ways. It suggests guidelines for developing taxonomies in different domains; describes steps in building repositories of learning materials; and suggests a methodology for studying reusability of learning material.


Abstract:
This is a very important report for the RILO group. It describes a project of the library working with academics to create IL learning objects. It gives a warts and all account of the project. The eventual decision was that Birmingham would re-use others’ LO’s but not create their own (there are a large number of UK wide IL LO projects on which they can draw).


Abstract:
The author talks about the use of a Learning Objects in designing online instructional content and compares them to small lego-like instructional components (objects) that can be readily
assembled, delivered and reused in multiple instructional and learning contexts. He investigates how tagging objects makes it possible to match objects with individual competency levels, hence provides greater flexibility and relevancy for end users. Other advantages of developing material to be reused as learning objects such as ease of update and search, customization, interoperability and increased value of content are discussed in relation to information literacy instruction.


Abstract:
In Australia there are currently large-scale national and state initiatives underway to develop a critical mass of learning objects. The development of a Learning System Architecture has also become a vital step to make it possible to manage these learning objects. Packages that will enable students and teachers to communicate, collaborate, locate and access resources within intellectual property arrangements, assemble digital resources into learning sequences, assess and report are all necessary requirements. The Learning System Architecture emerging in Australia enables these disparate systems to function together as seamless and interoperable packages. A new profile of teacher librarian competency is also being developed in Tasmania to assist with planning the professional learning needs of this group.

3. Reusable learning objects - Practical examples


Abstract:
This case study presents the application of multimedia in an E-learning and blended learning product which aims at developing students’ information literacy. The paper will elaborate on our development concept. Especially, on how we have applied our main principle; to create user focused e-learning. This means that we have aimed at taking the user’s perspective and taken into account that we are going to facilitate virtual rooms for reflection, where the learner can create new knowledge. We have applied a problem oriented approach to learning because we wanted the learner to become motivated and personally engaged.

Quick list of information literacy site examples
- [https://dspace.ucalgary.ca/handle/1880/43471](https://dspace.ucalgary.ca/handle/1880/43471)
- [http://lants.wetpaint.com/?t=anon](http://lants.wetpaint.com/?t=anon)
- [http://oil.otago.ac.nz/oil/](http://oil.otago.ac.nz/oil/)
- [http://pilot.library.qut.edu.au/](http://pilot.library.qut.edu.au/)
- [http://www.vts.rdn.ac.uk/](http://www.vts.rdn.ac.uk/)
- [http://info.library.unsw.edu.au/skills/elise.html](http://info.library.unsw.edu.au/skills/elise.html)
- [http://www.informationliteracy.org.uk/Resources_By_Theme/Tutorials_australia.aspx](http://www.informationliteracy.org.uk/Resources_By_Theme/Tutorials_australia.aspx)
- [http://www.caledonianacademy.net/spaces/....BestPracticeExamples](http://www.caledonianacademy.net/spaces/....BestPracticeExamples)
- [http://library.acadlia.ca/tutorials/research/](http://library.acadlia.ca/tutorials/research/)
Kuhlthau’s Model of the Stages of the Information Process, Humbolt State University. Possible activities - the research process – following on Kuhlthau’s model. We should talk about this model and whether we support the use of it, but this is an interesting example of a very different sort of LO. They have published on this extensively, including the theory on which the LO is based.

4. Student experiences/use

Abstract:
This project studies the use of multi-modal media objects in an online information literacy class. Significant relationships were found among computer skills, teaching materials, communication tools and learning experience.


5. Management of re-usable learning objects

Abstract:
This study includes the design, implementation, and deployment of a learning-object portal which simplifies and promotes standardized description of learning objects, registration and storage of such objects, and provides a foundation from which developers can build and deploy learning-object-metadata (LOM) tags which describe a learning object. Using the portal, this study measured to what extent instructional designer use of a learning-object registry portal to define a learning object's metadata improved the metadata's correctness and completeness and efficiency compared to metadata created by hand.


Abstract:
This paper discusses research that lead to the identification of new metadata for learning objects. The main finding was the identification of the metadata, including those that are not defined in current e-learning standards. Some of the new metadata could be introduced to the existing standard metadata categories; the others could be used to form completely new categories.


The RLO-CETL develops, shares and evaluates learning objects and leads on innovation in pedagogical design. RLO-CETL is funded by the Higher Education Council for England (HEFCE) to be a Centre for Excellence in the design, development and use of learning objects.


Abstract:
Four elearning portals most effective in providing health care information are identified: The Medical Library Association’s Center of Research and Education (CORE), the Health Education Assets Library (HEAL), the American Academy of Medical College’s MedEDPortal, and the Multimedia Education Resource for Learning and Online Teaching (MERLOT). Various user groups such as librarians, educators, and students are discussed, as well as their reasons for using e-learning object portals. New roles for librarians in promoting and developing these portals are also reviewed.


Abstract:
This article describes the "ProLearn Query Language", a query language that was developed for repositories of learning objects. PLQL is primarily a query interchange format, used by source applications (or PLQL clients) for querying repositories (or PLQL servers). The authors give a precise description of the semantics of PLQL, concerning both kinds of clauses and their mutual relationship and describe two experimentation efforts around PLQL: one involving the ARIADNE repository and the other the EUN Learning Resource Exchange initiative.
Appendix 14 – Key reusable objects
Sample list of examples and ideas we investigated as well as demonstrated in the workshops:

ANTS
http://ants.wetpaint.com/?t=anon

OILS
http://oil.otago.ac.nz/oil/

Follow up examples in use look at Business information skills, especially module 6
http://www.flexiblelearning.auckland.ac.nz/business_information_skills/18.html

PILOT
http://pilot.library.qut.edu.au/

LOLI - Learning On-Line Interactively

RDN Virtual Training Suite

UWA – IRIS
http://www.arts.uwa.edu.au/studentnet/enrolment/iris

Griffith

ELIS
http://info.library.unsw.edu.au/skills/elise.html

Collection from UK featuring Australian sites and others
http://www.informationliteracy.org.uk/Resources_By_Theme/Tutorials_australia.aspx from the UK
http://www.informationliteracy.org.uk/Resources_By_Theme/Tutorials_uk.aspx

UK again:

SAFARI – from the Open University- good "Unpacking Information" module
http://www.open.ac.uk/safari/index.php

USA
http://spfldcol.libguides.com/content.php?pid=3558&sid=28695
http://library.acadiau.ca/tutorials/research/ cartoon style

University of Newcastle Endnote tutorial

This EndNote Tutorial was developed by Library staff at the University of Newcastle, and is designed to provide an introduction to using EndNote.

Demonstrated at the workshops:
http://www.bbk.ac.uk/liblife/InformationLiteracy/_LOs/Schgoogle_ver.2.0/SchgooleInt roduction.htm

New York University Tutorial
http://archive.library.nyu.edu:8000/research/tutorials/boolean/tutorial.html

Texas Information Literacy Tutorial
http://tilt.lib.utsystem.edu/

Wisconsin Online

University of Huddersfield Information Literacy Toolkit
http://www.hud.ac.uk/cls/infolit/topics.htm

Synonym search
http://www.nwmissouri.edu/library/courses/research/head.htm

http://www.flexiblelearning.auckland.ac.nz/business_information_skills/18.html

Tic tac toe citation identifier game
http://www.lib.jmu.edu/tictactoe/

Check citations – by selecting from 3 boxes – medium / referencing style / output
http://www.lib.jmu.edu/help/checkcite/

The Citation Machine (MLA, APA etc)
http://citationmachine.net/index2.php

You Quote it, you note it – Plagiarism tutorial
http://library.acadiau.ca/tutorials/plagiarism/

Cornell University - How to find scholarly articles
http://www.youtube.com/watch?v=uDGJ2CYfY9A
The Scarborough Library Tour (student video - pretty bad but there are a few good ideas)
http://www.youtube.com/watch?v=uPl-L-sD0E4

Pima Community College (range of online tutorials)
http://www.pima.edu/library/help/how-to

http://www.merlot.org/merlot/materials.htm?category=2269&&
Appendices – STE information literacy program

Appendix 15 - Using Wikis to embed information literacy in Science, Technology and Engineering cornerstone units

Proposal

• Use Wikis\(^{12}\) to facilitate and enrich information literacy teaching in first year cornerstone science units.
• Start with 1-2 cornerstone biological sciences units in 2010.
• Extend to all first year cornerstone science subjects in 2011.

Key features

• Students would use a diagnostic tool (modified Mittermeyer survey) to assess entry level skills and make explicit the skills that are expected of them in terms if University graduate capabilities.
• Set of online library skills tutorials (http://latrobe.libguides.com/lso) provide scaffolding for the development of inquiry/ research skills.
• Students work in small teams to create and edit wikis based on lecture topics in their unit.
• Skill development is reinforced and supported by librarian assistance in person and online.
• Reviewed and evaluated at the end of each unit.

Issues to consider

• Identifying read and edit control of the wikis, including how the content will be monitored so as so to avoid the posting of inaccurate/ misleading information.
• Whether to make the wikis public – available to all students enrolled in the unit, all La Trobe University students, Public etc
• Which wiki software to use – should be able to be incorporated into the existing LMS (http://www.wikimatrix.org/)
• Security and privacy issues.
• Is this form of assessment sustainable?
• Are the results/ outcomes measurable? Can we demonstrate that this has improved information literacy skills?

Benefits/ Outcomes

• Students develop inquiry/ research capabilities.
• Uses an inquiry based learning approach.
• Authentic task which is embedded in the unit curriculum.
• Students develop group work skills.
• Encourages the development of information literacy skills through peer instruction.
• Library staff work in partnership with academics to develop programs which facilitate the development inquiry/ research skills.
• Students engage more with tasks/ try harder those that are viewed by peers rather than those assessed my lecturer/ tutor etc (need citation) so are more likely to engage with the wiki activity/ assessment.
• The wiki can then be used as a revision tool for the entire class.
• Students get an opportunity to evaluate different information resources.
• Demonstrates the wide range of resources available to students.

\(^{12}\) Wikis are collaborative websites with open editing. Examples includes Wikipedia.
Appendices – Communications

Appendix 16 – Library news article

Building information literacy

La Trobe University librarians have a long and successful history of collaborating with academic staff on student information literacy programs. However, many students still do not have an opportunity to develop these skills sufficiently.

Finding ways to ensure that all students graduate with strong inquiry/research capabilities and information literacy skills for work, life and lifelong learning is the aim of the Building Blocks project currently being undertaken in the Library.

The Building Blocks: embedding inquiry research (information literacy) graduate capabilities into the curriculum project is one of two curriculum pilot projects that were initiated in 2009 by the Curriculum, Teaching and Learning Centre to test and refine potential processes for implementation in 2011 through to 2013 as part of the University’s Curriculum Review and Renewal program.

The Building Blocks project is investigating the issues and exploring ways to deliver effective, systematic and sustainable information literacy programs that are part of the fabric of the curriculum across the University.

The project is focusing on four key areas, each with a team of staff working on different aspects of the task:

- The Information Literacy strategy group is expanding the work of the Information Literacy (IL) Coordinating Committee which developed the Library’s Information Literacy Policy and Framework in 2008. The group is exploring what currently works, the role of online learning, curriculum models and future directions with a view to drafting a University-wide information literacy strategy.
- The Action research/evaluation group is evaluating the Information literacy component of the Health Sciences first year curriculum with a view to considering how aspects of the Health Sciences program may be used as a model for embedding inquiry research skills into the curriculum in other disciplines.
- Initial results from the evaluation data demonstrate clearly that the information literacy program implemented this year has had a very strong positive effect on students’ information literacy skills, including in areas such as their understanding of citations and peer reviewed journals, finding appropriate journal articles and evaluating internet sites.
- The Reusable learning objects group is developing a number of learning objects ranging from redesigned interfaces for accessing existing web pages and library guides to redevelopment of complete generic information literacy tutorials. This Faculty prototype group is working in collaboration with the Faculty of Science, Technology and Engineering to develop prototypes for future development, in particular looking at information literacy skills for first year commencing students in the cross-campus Foundations of Science unit.

The project raises many issues and questions which will be explored in forums and workshops within the Library and the University.

The project website at www.lib.latrobe.edu.au/building-blocks/ will provide progress reports and seek to extend the dialogue beyond the immediate project activities and timetables to the wider university and professional library community. Your comments are welcome.

Flora Stahbury, Learning and Research Services Manager
### Information Literacy Strategy and Discussion Paper

29/9/09, 04:08 PM

We welcome your comments, queries or suggestions about the Draft Information Literacy Strategy and Discussion Paper.

Download **SUMMARY** (PDF)

Download **Information Literacy Strategy** (PDF)

Download **Discussion Paper** (PDF)

Please feel free to add a comment below.

For further information please contact **Fiona Salisbury**
Learning and Research Services
La Trobe University Library
Ph 61 3 9479 1925

| add comment | permalink |
Appendix 18 – Project summary flyer
La Trobe University librarians have long collaborated with academic staff to provide student information literacy programs. However, many students miss out on developing these skills sufficiently. All students need the best chance to develop foundation information literacy skills for effective research in first year and throughout their undergraduate degree.

The University’s Design for Learning recommendations make clear that a systemic, coherent and sustainable University-wide approach to the design of undergraduate programs is needed to ensure all students are given opportunities to develop knowledge and skills in the six broad graduate capabilities (Writing, Speaking, Inquiry/Research, Critical Thinking, Creative Problem Solving, Team Work).

Information literacy is a key element of the inquiry/research graduate capability. There is a strong imperative to implement a model of research skills education that gives all La Trobe students the opportunity to graduate with the necessary information literacy skills for work, life and lifelong learning.

The ‘Building Blocks Project: Embedding Inquiry/Research (information literacy) Graduate Capabilities into the Curriculum’ investigated the issues by testing and refining current Library processes and practices, and exploring potential new information literacy program design and resources.

In order to achieve its aims the Project focussed on four key areas of activity:

- Development of an Information Literacy Strategy
- Action research - Health Sciences common first year information literacy program
- Development of reusable learning objects
- Investigation of possible information literacy programs for Science, Technology and Engineering

Each area of the Project involved a cross-campus team of library staff. The development of an Information Literacy Strategy was central to the project. The proposed Strategy is intended to be implemented as a whole of University activity, strongly based in discipline specific, embedded academic tasks and supported by comprehensive Library services and resources. Implementation of the strategy model should ensure information literacy programs are part of the curriculum across the University.

The Project has resulted in recommendations for innovative approaches that will give every student the best opportunity that they can have to develop information literacy skills. It builds upon the existing positive partnerships between academics and library staff, and the services and resources provided by the Library, but does so in a more scalable, sustainable and systematic way.
Information Literacy Strategy

Development of the Information Literacy Strategy has involved consultation across the University and the proposed strategy is closely aligned with the key themes and recommendations in *Design for Learning*.

The Strategy builds upon the existing positive partnerships between academics and library staff, and the services and resources provided by the Library, but does so in a more scalable, sustainable and systematic way.

The Strategy completes the Library Information Literacy Policy and Framework developed in 2008.

The Policy explains why information literacy skills are crucial to independent learning and outlines the Library’s objectives and responsibilities in contributing to the development of information literate graduates.

The accompanying Framework offers a guide to the sequential development of Information Literacy skills, matching desired attributes with specific competencies across three levels.

The Information Literacy Strategy acknowledges that student development takes place in a whole of University context through activities that are integrated into the curriculum and those that supplement the curriculum. It adds to the existing Policy and Framework by outlining an action plan for using the Information Literacy Framework as the basis for developing inquiry/research capabilities.

Undergraduates

The strategy for undergraduates proposes an innovative and new approach to design of information literacy programs to ensure students reach the proficient level of the Information Literacy Framework by the time they graduate. This means setting students on a learning continuum in first year so that they are able to develop foundation skills early in the course of study and progress to a proficient level of skills by their final year.

What next?

Contributing to improving information literacy teaching practice within flexible learning environments to enhance graduate capabilities is a strategic priority for the Library in 2010. The Library will continue to work in partnership with Faculties to enhance student learning and achieve the relevant recommendations of Design for Learning.
Appendix 19 – Project brochure
BuildingBlocks
Embedding Inquiry/Research (information literacy) graduate capabilities into the curriculum

La Trobe University Library
La Trobe University librarians have long collaborated with academic staff to provide student information literacy programs. However, many students miss out on developing these skills sufficiently. All students need the best chance to develop foundation information literacy skills for effective research in first year and throughout their undergraduate degree.

The University’s Design for Learning recommendations make clear that a systemic, coherent and sustainable University-wide approach to the design of undergraduate programs is needed to ensure all students are given opportunities to develop knowledge and skills in the six broad graduate capabilities (Writing, Speaking, Inquiry/Research, Critical Thinking, Creative Problem Solving, Team Work).

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1 La Trobe University. Design for Learning. Curriculum Review and Renewal at La Trobe University. 2009.
Development of the Information Literacy Strategy has involved consultation across the University and the proposed strategy is closely aligned with the key themes and recommendations in *Design for Learning*. The Strategy builds upon the existing positive partnerships between academics and library staff, and the services and resources provided by the Library, but does so in a more scalable, sustainable and systematic way.

The Strategy completes the Library Information Literacy Policy and Framework developed in 2008.

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The accompanying Framework offers a guide to the sequential development of Information Literacy skills, matching desired attributes with specific competencies across three levels.

The Information Literacy Strategy acknowledges that student development takes place in a whole of University context through activities that are integrated into the curriculum and those that supplement the curriculum. It adds to the existing Policy and Framework by outlining an action plan for using the Information Literacy Framework as the basis for developing inquiry/research capabilities.

While the focus of the Building Blocks Project has been on reviewing and renewing undergraduate Information Literacy programs, the Strategy also covers postgraduates and staff in keeping with the existing Information Literacy Policy and Framework.

**Undergraduates**

The strategy for undergraduates proposes an innovative and new approach to design of information literacy programs to ensure students reach the proficient level of the Information Literacy Framework by the time they graduate. This means setting students on a learning continuum in first year so that they are able to develop foundation skills early in the course of study and progress to a proficient level of skills by their final year.

For undergraduates, the Information Literacy Strategy recommends an early introduction to scholarly information skills and library services, so that all students start to acquire these skills at the start of their course of study. The Strategy also proposes the introduction of a diagnostic tool for all commencing students to assess entry level skills and knowledge of the scholarly information seeking process. The diagnostic tool would also make explicit skills that are expected and gives a clear message to students about the nature of their role as developing scholars ready and able to undertake research activities and pursue inquiries from first year.

Given that in many cases students are not yet at foundation level in first year, the Strategy includes the scaffolding and learning tools to support the development of skills both within and outside the formal curriculum. One way to ensure that all commencing students have the opportunity to access this...
information, is to make it available in a supported, online environment that students can return to as needed, enabling self-directed study. Ideally, students would complete a quiz or other form of assessment as a hurdle requirement to demonstrate competence in these foundation skills.

The Information Literacy Strategy recommends that Library staff should be included in the early design phase of the curriculum to embed information literacy elements. It is envisaged that foundation skills for each faculty will be determined in collaboration with faculty staff, guided by the Library’s Information Literacy Framework. This was the model adopted in the development of the Health Sciences first year curriculum. The results from the Health Sciences evaluation indicate that embedding information literacy in the curricula structure, particularly in first year units, can significantly improve the acquisition of library research skills across a whole student cohort.

Strategy for undergraduates

- A diagnostic tool for all students that both assesses student entry-level skills and makes explicit skills that are expected in terms of University graduate capabilities related to information literacy.
- Scaffolding for learning – a set of online foundation skills tutorials embedded in the first year curricula structure. Ideally these will be incorporated into cornerstone units to acknowledge their importance and to emphasise a university-wide approach to building these skills. Assessment of the skills will check competence and progress against graduate capabilities.
- Skill reinforcement - further development of skills embedded in curriculum where appropriate and reinforced and supported by librarian assistance, in person and online and discipline-specific online resources.
- A final assessment in capstone units to measure students, acquisition of a set of discipline-specific information literacy skills.

Strategy for postgraduates

- A checklist to identify possible gaps in existing knowledge and to provide links to resources to develop these skills.
- Depending on the gaps in existing knowledge, postgraduates may access any of the tutorials already created for undergraduate students and/or link to further information on building more advanced skills, embedded into a University endorsed postgraduate support program.

- Continuation of the successful discipline-specific programs and advice offered by Faculty Librarians.

Strategy for staff

- Improved communication and promotion of existing resources and services.
- Regular resource familiarisation and skills enhancement programs.
- Continued collaboration with Faculty Librarians to embed inquiry/research skills in the curriculum.

Outcomes

If successfully implemented, the Strategy will result in:

- Graduates who can recognise the need for and find credible information and then use that information to develop new skills and knowledge.
- An integrated information literacy program that provides all students with the opportunity to develop this capability.
- Librarians and academics who understand how each contributes to this process and work together to build capability in students.
- A comprehensive information literacy program that is sustainable and measurable, allowing Librarians time to keep abreast of new developments and respond accordingly.
Building Blocks: Embedding Information Literacy

Action Research: Health Sciences

In 2009, in partnership with the Faculty of Health Sciences the Library redesigned the information literacy program for first year students to align it with the inquiry-based learning design of the new common first year curriculum. This provided a guided program to enable students to develop appropriate foundation levels of information literacy. To evaluate this approach data was collected about the information literacy program and related library services that were developed in response to the needs of the new curriculum. The results of the evaluation provided evidence to inform the development of the Information Literacy Strategy.

The program

The common first year health sciences program embedded library research tasks into one unit. Collaboration between the Library and the faculty ensured that a scholarly approach was required of students to find a range of materials.

To enable students to develop the skills to complete set library research tasks, a group of online information literacy modules was created to guide them in their learning. Students also completed a facilitated reflection on the research process. To test the level of Information Literacy skills developed, students were asked to complete a randomised, formative online quiz as part of the unit assessment.

Evaluation of scholarly literacy

Quantitative and qualitative data was gathered to determine the level of scholarly literacy of incoming first year students, and to assess the value of the information literacy program to student skills.

In order to examine students’ knowledge and skills, and map improvement in library research capabilities, students were tested at three points in the 2009 academic year:

**March** - pre-experience survey (20 questions, 1000 usable responses, 60.6%)
**May** - assessment quiz (15 questions, 90.7% of students completed)
**September** – post-experience survey (20 questions, 1083 usable responses, 65.5%)

The pre/post-experience surveys included 11 identical questions that were designed to test respondents’ knowledge and understanding of scholarly information seeking. The surveys and quiz questions correspond with the ‘Foundation level’ of the La Trobe University Library Information Literacy Framework.

While it is evident that the vast majority of students could not demonstrate foundation level skills when they commenced their studies in Health Sciences, the various components of the information literacy program (structured research tasks, facilitated reflection on the research process, online modules, online quiz etc.) clearly contributed to an improvement in library research skills over the course of the year.

Overall, improvement was demonstrated between the pre- and post-experience surveys. A selection of results comparisons for particular questions is shown in Table 1. The question types which show an opportunity for even further improvement could be the focus of further development for this cohort in 2nd year and beyond.

**Table 1. Pre- and post experience survey selected results comparison**

<table>
<thead>
<tr>
<th>Question Type</th>
<th>Pre-experience result* March ’09*</th>
<th>Post-experience result* September ’09*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal article citation</td>
<td>23% correct</td>
<td>59% correct</td>
</tr>
<tr>
<td>Referencing</td>
<td>28% correct</td>
<td>59% correct</td>
</tr>
<tr>
<td>Boolean searching and or</td>
<td>37% correct</td>
<td>48% correct</td>
</tr>
<tr>
<td>Evaluate an internet site</td>
<td>24% correct</td>
<td>38% correct</td>
</tr>
<tr>
<td>Peer reviewed journals</td>
<td>4% correct</td>
<td>17% correct</td>
</tr>
</tbody>
</table>

The quiz was a formative exercise which consisted of questions which were tailored to the content in the Information Literacy Modules. Results overall show an average score of 12.15 out of 15, the best of 3 attempts being taken as the score. A selection of quiz results for question categories similar to those in the surveys show very positive outcomes for the students.

**Table 2. Quiz selected results for categories**

<table>
<thead>
<tr>
<th>Question category</th>
<th>Quiz result category* May ’09*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finding items on a resource list</td>
<td>71% correct</td>
</tr>
<tr>
<td>APA Referencing</td>
<td>88% correct</td>
</tr>
<tr>
<td>Planning a search</td>
<td>80% correct</td>
</tr>
<tr>
<td>Internet information</td>
<td>90% correct</td>
</tr>
<tr>
<td>Finding peer-reviewed journal articles</td>
<td>79% correct</td>
</tr>
</tbody>
</table>

* Figures have been rounded
# The pre/post-experience knowledge questions were identical, however the Quiz questions were different; students’ results were the best of 3 attempts and the figures here reflect the % correct for the question category overall.
Online modules usability testing
The Health Sciences online modules were a key learning resource for students. Statistics on the use of the modules for 2009 indicated that there were 12,299 hits in total (March – Oct 2009) and indicated substantial hits on particular modules (ranging from 857-1793). The most used modules were those with embedded links in unit materials:
- Referencing with APA style
- Finding items on a resources list
- Finding journal articles by topic
- Can’t I just Google?
The modules considered most useful by students were:
- Referencing with APA
- Finding journal articles by topic
- Finding credible internet information

Participants of usability testing gave positive feedback about the modules in terms of usefulness, helpfulness, design, content, multimedia and language and practice exercises. There was also constructive feedback that navigation, design, and promotion of the modules in workshops could be improved. When asked what worked well in terms of the ‘Can’t I just Google?’ video, a majority found the video relevant commenting that it was ‘appropriate and ‘easy to understand’.

Use of library services and resources
Data was also collected on the use of the Library services and resources during 2009 by the students in the health sciences common first year.
Library Help Desk statistics showed no unusual impact. Collections usage data showed an increased number of multiple copies and prescribed materials for the common first year students.

Health Sciences evaluation outcomes
The evaluation of the Library services and programs designed to support the Health Science common first year indicated that the Library has made a difference to the development of first year students’ scholarly information seeking skills. It is evident that a multi-faceted approach in which a variety of support is provided is beneficial for students to access when and where it is required.

Science, Technology and Engineering
To investigate future information literacy programs for first year students, in this part of the Project Library staff collaborated with staff from the Faculty of Science, Technology and Engineering to explore how information literacy skills could be integrated into their cornerstone units. In particular the focus was on possible ways to integrate the information literacy strategy.
Reusable Learning Objects

Reusable Learning Objects or tools provide critical scaffolding for the online learning that is essential to implementing the Information Literacy Strategy across the University.

As part of the Building Blocks Project, two key tools have been developed to support the implementation of the Information Literacy Strategy.

- Library Skills Online - a set of five modules designed to introduce information literacy skills to first year students.
- LibAnswers - a web based Q & A system and FAQ knowledge base that enables students to search the knowledge base and ask questions from anywhere at anytime.
Building Blocks

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Appendix 20 – Concurrent initiatives

These recommendations are based on the literature and the practical experience of the Building Blocks Project. These recommendations supplement the existing recommendations from the various Project groups and are based on specific educational design principles.

1. Peer support programs focussed on research skills
   a. This is the single most effective educational design intervention the library could make.
   b. This could be a stand alone program run by the library and support through the La Trobe awards program, or could be embedded in any peer support programs conducted by the faculties, or some combination of both
   c. We know that students learn best in a socially supportive environment from and with their peers. Investing in training a small group of students will grow a community of scholars around research/inquiry skills more effectively than running multiple library sessions.

2. Improve Library/LMS involvement
   a. Lobby to ensure the new LMS is able to support whole of university sites
   b. Develop a library LMS site with branches to separate faculty information
   c. Embed librarians in the cornerstone units in a library /academic skills discussion board
   d. Ensure there is a link to the library on the LMS opening portal page
   e. Lobby to have the library linked on the front page of the University.

3. Customised, tailored responses for each faculty
   a. Ensure as much as possible that faculty librarians are involved in curriculum reform projects at a very early stage. It is essential to have library involvement in the development of the cornerstone units.
   b. Generic library programs are less effective than tailored programs where students can grasp the discipline specific nature of the library role, and where they can immediately practice and apply the skills they are learning. Generic programs should be freely available to all students from the library website. Their use should be monitored.
   c. Develop engaging, active learning programs for later years of study eg active, interactive support for cap stone years. This needs to be developed while
   d. Develop support program for postgraduate students (refine Post Grad essentials.

4. Develop mini help, job aids to be used in a timely way rather than relying on long generic IL modules. These can be available through “Ask a Librarian” and also linked at crucial points eg- Need to find a journal article? Need to find a book? Finding items on a reading list?

5. Re-usable learning objects network amongst academic libraries
   a. There is likely to be considerable interest in support sharing of learning objects amongst academic libraries. This could be confined to IRUA libraries or more widely. La Trobe could develop a policy of creative commons release of materials.
   b. Develop high production value reusable learning objects that do not need to be constantly updated for specific things eg getting started in
research/enquiry; personal information management strategies; personal research styles, etc.

c. Liaise with LAS to develop a seamless experience of academic skills support for students. Use LAS advisors as peer/critical friends on development projects.

6. Develop La Trobe perspectives on ‘how we do research’, ‘what research means’, ‘where do I start’ ‘who can help’ etc using video snapshots (mini talking heads) of real La Trobe students and lecturers. This could form part of a larger orientation and transition support material. It is likely there would be small, semi structured video vignettes based on real La Trobe students and staff. This will support the transition aim of making explicit the expectations and culture of the La Trobe University, at the same time as giving student support information. These vignettes should reflect the diversity of students and staff at La Trobe. They can be used on the website, and in various other ways.

7. Research what La Trobe students are really doing for research- focus on using technologies and tools and grounded research.

8. Build evaluation into these interventions from the start. Plan to actively research the research and library use activities of students and use this material to inform the impact research.
   a. Establish some baseline data of incoming student skills.

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Educational Design Coordinator