

## **Title:**

*Collaborate, innovate, change: Designing and delivering an information literacy programme to undergraduate nursing students. Presenters: Lorraine Nielsen and Stephanie Cook, University of Auckland, Auckland, New Zealand. Authors: Stephanie Cook and Lorraine Nielsen, Heather Baker, Lisa Stewart and Jo Edwards*

## **Abstract:**

The importance of information literacy in the nursing curriculum is well documented in the literature. The proliferation of information, the trend towards evidence based practice, and increasing demands for nurses to stay current with emerging research trends necessitates the ability to recognise when information is needed and a capacity to locate, evaluate and use information effectively.

The objective of this project was to collaboratively design and deliver curriculum-based information literacy embedded within the nursing programme. Based upon best-practice examples and using the University of Auckland's graduate attributes as benchmark skills, this project combined the expertise of The University Library staff (Nursing Subject Librarian and a Learning Services Librarian) and academic staff of the School of Nursing. Student-centred learning activities specifically addressed academic skills, nursing-specific competencies, and information literacy/research skills. Responsibility for the development of activities and learning opportunities was shared between the Library and School of Nursing staff based on academic, subject and learning design roles.

This paper describes the first year of this project which includes components covering plagiarism and referencing, evaluating websites, academic reading and writing, library catalogue and database searching. There will be collaborative ongoing evaluation of the project by students, academic and library staff. At this stage only interim results are available. It is planned to continue the collaboration to ensure information literacy skills are developed incrementally throughout the 3-year undergraduate nursing programme. It is envisaged that this collaborative approach will improve students' learning and have a beneficial long term effect on their lifelong learning skills.

## **Introduction**

The definition of information literacy as used by the Australian and New Zealand Institute for Information Literacy [ANZIL]<sup>1</sup> is the ability to "recognise when information is needed and the capacity to locate, evaluate, and use information effectively" (p. 3).

These attributes have been well documented in the literature as being of fundamental importance within nursing education and the nursing profession.<sup>2-5</sup> Nurses must possess information literacy skills in order to make good clinical decisions and provide appropriate patient care.

"With these underlying skills, students will be better equipped to consolidate and extend their key information literacy skills to include research appreciation and

application. These are vital for effective lifelong learning and a prerequisite to evidence-based practice”.<sup>6</sup>

Discussions in the literature have primarily centred on ways of implementing information literacy within courses and methods of delivery, rather than focusing on the collaborative process involved in the implementation of such programmes.<sup>7,8</sup>

In addition to describing the first year of the pilot information literacy project, this paper also examines the collaborative process that took place, the effectiveness of integrating information literacy into the programme and the value of using an incremental approach to information literacy.

### **University of Auckland Context**

The University of Auckland is the largest university in New Zealand with a total of 38,502 students including more than 4,503 international students from over 97 countries.<sup>9</sup> There are eight faculties, a School of Theology and two large-scale research institutes. The Faculty of Medical and Health Sciences includes the schools of Nursing, Pharmacy, Population Health, Medical Sciences and Medicine. The School of Nursing was established in 1999, and supports over 1000 students including 270 undergraduates. One hundred new students enrol each year undertaking a variety of courses with other students in the faculty in Semester I and two courses specifically in the School of Nursing in Semester II. The School strives for clinical, professional and academic excellence in its graduates, with information literacy viewed as a foundation skill.

The library system at the University of Auckland comprises thirteen libraries spread over five campuses.<sup>10</sup> The Philson Library serves the Faculty of Medical & Health Sciences. Each Library has subject librarians with specific responsibilities for providing library services and resources to students and staff of a specific faculty or school. There is also a Learning Services team consisting of four Librarians. Part of their role is to collaborate with subject librarians and other library staff in designing information literacy courses with a student-centred approach.

The University of Auckland<sup>11</sup> has an information literacy policy that clearly affirms the University's commitment to developing the information literacy skills of its students. It also identifies the roles and responsibilities of the key contributors to the development of information literate graduates (academic staff, the Library, and the Centre for Academic Development).

In addition to the information literacy policy, the University of Auckland has four graduate profiles<sup>12</sup> which outline the skills the University expects its students to acquire by graduation at both undergraduate and postgraduate level. These include discipline-specific skills, along with general intellectual and life skills. Teaching staff at the University of Auckland are expected to design and deliver curricula and courses that provide opportunities for students to achieve the attributes listed in the appropriate graduate profile. The graduate profile also recognises the importance of information literacy.

Having guidelines and a policy that clearly state the importance of information literacy, lifelong learning, and who the key contributors are, provides librarians and lecturers with a common understanding and shared vision from which to work together to collaborate. It also creates opportunities for establishing new partnerships and innovations in teaching and learning.<sup>13</sup>

### **Library Support**

Various library support activities are offered to students and staff within the School of Nursing. The Nursing Subject Librarian has been in her position for over 10 years, and has developed an excellent working relationship with and trust amongst the academic staff so that she is seen as integral in assisting students and staff with their research needs and skills. The importance of mutual respect and trust in effective collaboration has been discussed by Schrage,<sup>14</sup> along with other elements such as ongoing communication, a shared understanding of the overall goal, and clear lines of responsibility. The importance of these factors in successful partnerships has also been investigated in a study conducted by Ivey,<sup>15</sup> focusing specifically on partnerships between librarians and academics.

Over the years, questions about the effectiveness of library tutorials offered to the Year 1 nursing students have been raised by the Nursing Subject Librarian and her colleagues. In the past, an assignment-based library tutorial was offered for assignment one. However from interactions with students at various intervals after the tutorial, library staff were aware that the students were not retaining what they were being taught and were still struggling with fundamental research skills.

Several factors were thought to contribute to this. The fact that only one hands-on library tutorial was offered to the Year 1 students meant that too much information was given within a short time. The students were overwhelmed and unable to retain what they were being taught. The students did not seem to be applying or connecting the library skills they were being taught to their actual assignments. The tutorial was also teacher-librarian led rather than student-centred. Despite students having the opportunity for hands-on practice, they were still following along with the librarian rather than being active participants in the learning process.

Comments from lecturers suggested that the students were relying heavily on freely available internet sources such as Wikipedia rather than using library databases, and were not evaluating the information they were finding. Many students were not correctly citing information using the American Psychological Association (APA) 5<sup>th</sup> referencing style, nor were they demonstrating an understanding of appropriate use of information versus inappropriate use or plagiarism. Conforming to academic writing conventions and structuring their assignments appropriately were also a challenge for some students.

Based on this information, the Philson Library Manager and the Nursing Subject Librarian approached the Head of the School of Nursing, the Director of Nursing Studies and the Undergraduate Programme Director with the suggestion of collaborating to deliver a more effective and integrated information literacy programme that would address at least some

of the issues identified. A Learning Services Librarian was asked to participate in this collaboration.

### **Aim of the Project**

The aim of this project was to provide an information literacy programme that was integrated, incremental and interactive. Achieving this goal required the integration of library resources, services and support more fully into the nursing programme rather than an 'add on'; a step-wise approach to building students' information literacy skills across a series of learning components and tutorials; and a shift towards a student-centred teaching approach.

### **The Project – Phase I**

After agreement was reached to trial an information literacy project with the Year 1 nursing students, several meetings were set up between the Nursing Subject Librarian, the Learning Services Librarian, the Nursing Undergraduate Programme Director, and a Year 1 Nursing Course Coordinator. It was decided to begin with the Year 1 nursing students as "research indicates that the first year of study at university lays the foundation for successful progression through a course".<sup>16</sup>

The lecturers and librarians examined the year one course outline and identified the most appropriate points in the course where information literacy could be integrated. Part of this process involved identifying the generic information literacy skills relevant for Year 1 nursing students. The Graduate Profile attributes<sup>17</sup> and ANZIIL standards<sup>1</sup> were used to assist in identifying skills. Roles and responsibilities were also discussed. The academic staff involved in the project focused on academic reading, writing and critical thinking skills, and the librarians focused on research skills, referencing and evaluating sources.

It was agreed that the students would undertake a pre-test survey to identify their existing knowledge and to gain insight into the students' perceptions of their information literacy skills. Furthermore, the students would be required to complete a compulsory online library tutorial and associated test focusing on searching the library catalogue. This was to ensure all students began their nursing course with a similar level of library knowledge. These skills could then be built on in the ensuing tutorials.

The students were required to complete two assignments in Semester II of their first year. The librarians and lecturers collaborated to modify the assignments so that elements of information literacy and learning outcomes were made more explicit, and the steps involved in the research process were clearly defined for the students.

The decision was made that the librarians would offer the students tutorials based around their two assignment topics in order to provide a context for their learning. As mentioned earlier, an assignment-based tutorial had been offered for the first assignment in previous years. However, this was redesigned with a more student centred focus. It was also decided to offer a second library tutorial based around assignment two in order to build on the students' information literacy skills in a systematic and step by step manner.<sup>18</sup> The literature indicates that it is important for students to see the relevancy of library tutorials to their

assignments.<sup>19</sup> This was a major focus in the redesign of the first tutorial and the inclusion of a second tutorial.

Other information literacy components were also developed, in collaboration with the lecturers, to provide support for the students. This included a library course resources webpage which contained links to course readings and additional support material. In addition to the two library tutorials, the Subject Librarian was also invited to speak to the students at three lectures.

Throughout the semester, the librarians and the lecturers made use of the University's online course management system (known as Cecil) to communicate with students and provide support material relevant to their course. Students used Cecil to post questions to the lecturers and librarians, and as a student discussion forum.

The following section outlines in more detail what was offered to the students over the initial nine weeks of the information literacy project.

In Week One of Semester II the students were given the information literacy pre-test. In the same week they were given an introductory lecture by the Subject Librarian. The content of this lecture provided students with an overview of library services and resources and an introduction to their library course resources web page. A print handout was distributed.

During Weeks One and Two the students were required to complete an online library catalogue tutorial (Te Punga)<sup>20</sup> and an associated library test. Te Punga uses the format of an interactive graphic novel to teach students how to use the library catalogue. The Subject Librarian and Learning Services Librarian developed an online library test based on the content of the Te Punga tutorial, but using nursing orientated questions. The test consisted of ten randomly generated multi-choice questions, students were allowed three test attempts and their highest mark was sent to their lecturer.

In Week Two the students were given a tour of the library in order to familiarise them with the physical layout of the library and location of key nursing resources. The class was divided into groups of up to fifteen students to make this more manageable, and each group was given a different time slot for their tour.

In Weeks Two to Four the Subject Librarian offered tutorials focused on the first assignment topic, which required the students to analyse the role of the nurse as portrayed by the media. Students were required to find at least five references and then analyse and summarise them. In addition, students were required to submit a library worksheet outlining their research process and their database search history.

The library tutorial focused on developing a search strategy and basic keyword searching in the databases Ovid CINAHL and Index New Zealand. The students were required to work in small groups and complete an activity sheet. Appendix A provides a sample of questions from the activity sheet. Groups then shared their findings with the class. The Subject Librarian facilitated discussion, with other librarians providing support during the tutorial.

In Week Three the Subject Librarian gave a lecture presentation to the students on plagiarism and referencing. The Year 1 Nursing Course Coordinator was present and also took part in the general discussion. Engaging students in large lecture situations can be challenging. In order to involve and engage the students more fully, a plagiarism quiz<sup>21</sup> was included in the lecture. The students worked through the quiz in small groups. The Subject Librarian then asked each group to share their answers and facilitated discussion. The students were given information and guidance on how to avoid plagiarism by using the APA referencing style. Students were directed to the APA style guide that had been developed by the librarians.

During Week Three the lecturers provided the students with information and guidance on how to read academic articles and how to write academically. This included a guided learning exercise for the whole class in which the students viewed an article and went through the process of reading the article critically. Online discussion was offered for concerns and questions related to the assignments.

In Week Seven the Subject Librarian gave a lecture presentation covering some of the common problems with referencing that were identified in assignment one. Students were given examples of incorrect referencing and in small groups had to identify what was wrong with the reference. Answers were then shared with the class. The Subject Librarian and lecturer facilitated discussion aimed at rectifying these common referencing problems.

The second half of the lecture presentation covered website evaluation. The students were given a web evaluation template that included six common criteria. An example of how this template could be used was also provided to the students (Appendix B).

In Weeks Seven to Nine library tutorials focusing on assignment two were offered. This assignment topic was based around interviewing a person who had prior experience as a patient of the New Zealand health care system. Students were expected to search the internet and library databases for information on the health condition of the person selected and the relevant health service he or she had utilised. They were required to evaluate the websites used and compare these with the journal articles found by their database search. A summary of their comparison, along with their database search history, was to be included as an appendix to their assignment. In order to demonstrate that they had applied evaluation criteria, students submitted a web evaluation template showing the websites used.

Initially no marks were allocated for the library component of their assignments. Feedback from the students indicated that they viewed the library tasks as additional work and did not see them as preparation for their assignment. As a result a 5% grade was allocated for the library component of assignment two in recognition of the amount of work involved.

The library tutorial for assignment two covered evaluating websites, plus advanced Ovid CINAHL searching. Again an activity sheet was utilised as a learning tool, along with group activities and sharing of information. Appendix C provides a sample of questions from the activity sheet. For the web evaluation activity each group was given a website to evaluate and was assigned one of the criteria included in the web evaluation template to use as the

basis for their evaluation. The websites evaluated included: a wiki; a blog; a drug company; a government department; a private organisation; and a personal website. Each group then shared their findings with the class, and a discussion about use of websites followed. For the advanced Ovid CINAHL section of the tutorial students were introduced to CINAHL subject heading searching.

In both the tutorials and lecture presentations, the Subject Librarian used open-ended questions and activities to encourage the students to review what they had learnt. This helped reinforce skills previously taught. Rather than the Subject Librarian simply recapping, the students were expected to participate in the learning process.

In Week 11 an information literacy post-test survey was given to the students in order to see if there had been any change in responses from the initial pre-test given at the start of Semester II.

Further evaluation of the project was carried out using the library's online student evaluation forms. After each hands-on library tutorial the students were asked to complete an evaluation form. From these evaluations the librarians were able to produce an overall report on the effectiveness of the tutorials. Students could also use the evaluation form to comment on what they liked and what they thought could be improved in the tutorial. The results were used to modify content where appropriate.

### **Collaboration:**

Meetings between the librarians and the lecturers were ongoing throughout the semester. These meetings involved suggestions and feedback on the library tutorials, discussion of results of the library test, and areas that needed more support for students. Discussions also focused on the actual assignment topics. There was extensive collaboration around wording of the assignment requirements to make the steps involved in completing them as transparent as possible.

The librarians were also asked to provide input into the assignment marking process. The librarians and lecturers met to analyse the library worksheets that were submitted with assignments one and two. They also examined the referencing from a sample group of assignments to identify common errors in assignment one. These referencing problems were then used as part of the class activity given by the Subject Librarian in Week Three.

The database search histories that the students were required to submit with their assignments were examined to identify problems with database searching (for example, incorrect use of truncation). This information was then used to address these problems with the students.

As the library component for assignment two (web evaluation template) was worth 5%, marking guidelines needed to be established. The librarians and lecturers worked together to ascertain a marking rubric for this section. The lecturers were then able to grade this section of the assignment.

Collaboration also took place between the Subject Librarian, a Learning Services Librarian and other Information Services Librarians from the Philson Library. For each hands-on tutorial an Information Services Librarian assisted the Subject Librarian. They were able to observe the students, and identify if any were experiencing difficulties. Based on their observations and feedback, changes to content and delivery of the tutorial could be made. Their presence at the tutorials also meant that when the Subject Librarian was not available to assist the students on an individual basis after the tutorial, the students felt comfortable approaching another librarian with whom they were familiar.

The collaboration between the Subject Librarian and the Learning Services Librarian was based around areas of expertise. The Subject Librarian had extensive knowledge of the nursing subject area, had extensive teaching experience in this area, and was familiar with the requirements of the School of Nursing. The Learning Services Librarian had expertise in learning design and information literacy. As an additional bonus, the Learning Services Librarian had also previously worked as a subject librarian at the Philson Library and was therefore familiar with the work that had been done with the nursing students in the past. The two librarians worked closely to design information literacy activities and tutorial content. The Learning Services Librarian attended at least one of each assignment-based tutorial and was able to offer suggestions and feedback.

### **Results:**

#### **Online library test (Week 1-2)**

Results from the online library test given in the first two weeks of the course showed that the average student mark was 8 out of 10. 77 of the 97 students completed the online test. Technical difficulties with the test software may account for some of those who did not complete the test. However, the results demonstrate above average knowledge of the library catalogue following completion of the online tutorial.

#### **Information Literacy Survey Pre and Post-Test**

The purpose of the pre-test was to assess students' current level of information literacy skills at the start of Semester II. Questions included library usage, problems using the library, computer literacy, and search strategy skills. Students were asked to rate their research and library skills on a scale of 1-10. This test was then repeated at the end of Semester II to see if any changes had occurred.

The following presents the outcomes for the pre and post-test Information Literacy Survey. Data results were analysed using SPSS 16.0. Test questions were adapted with kind permission from Auburn University and California State University.

The Research Process Skills Scale and the Using the Library Scale questions were used with permission from California State University Information Competence Assessment Task Force, along with questions 1-5 on the Information Competence Questionnaire.<sup>22</sup>

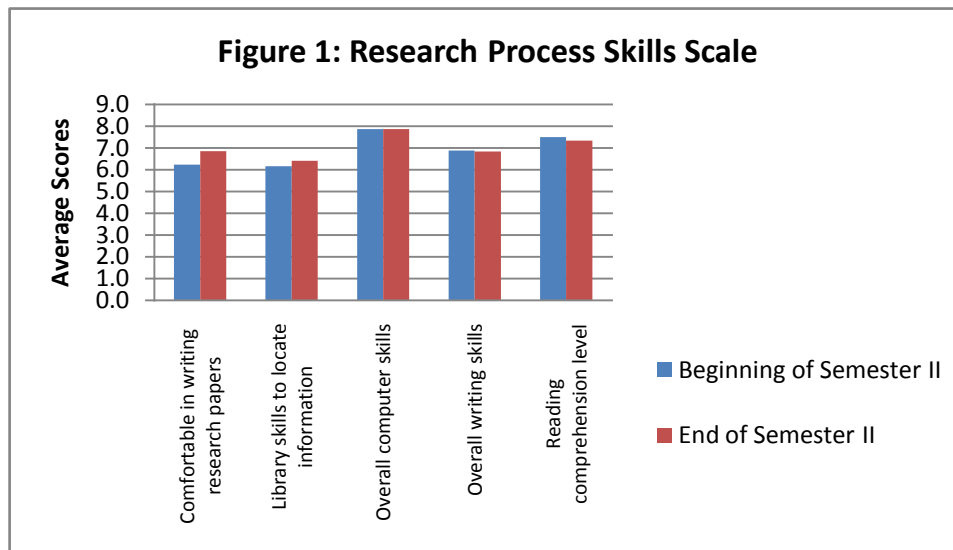
Questions 6-22 of the Information Competence Questionnaire were used with permission from Auburn University Library.<sup>23</sup>



### Research Process Skills Scale

The responses to the post-test survey were relatively similar to the pre-test initial data for the Research Process Skills Scale. This indicates students generally perceive their research, writing and comprehension levels as unchanged over the semester.

Figure 1 illustrates the average scores for each item in the Research Process Skills scale.

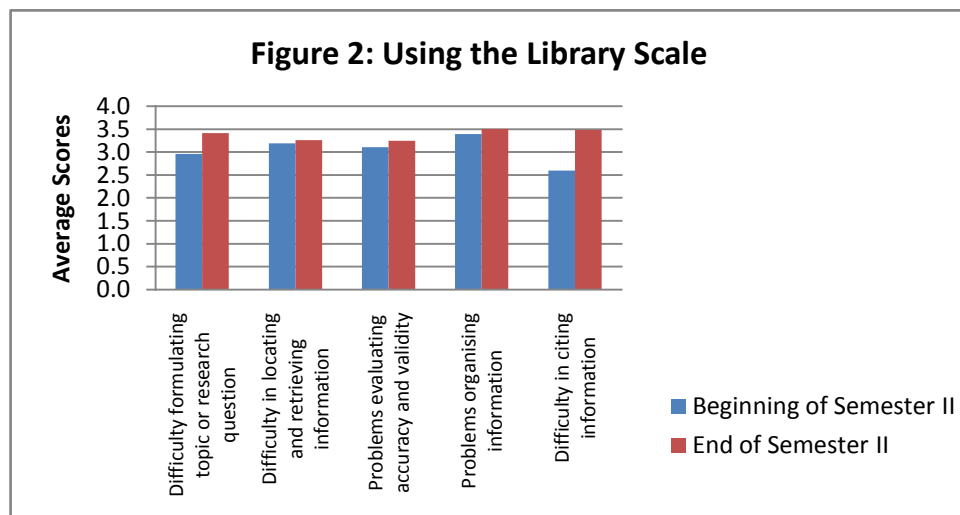


The total average scores for the Research Process Skills scale were 6.9 for the pre-test survey and 7.1 post-test. This suggests students are relatively comfortable with their research processing proficiency.

### Using the Library Scale

The average scores for each item in the Using the Library Scale was also relatively similar between the pre-test and post-test surveys. Two exceptions were the difficulty in formulating a topic or research question and the degree of difficulty in citing information. In these questions, students were found to be more confident in formulating their topic and with citing references in their assignments.

Figure 2 illustrates the average scores for the Using the Library scale.



The lack of significant difference between pre and post-test scores on the Research Process Skills Scales and the Using the Library Scale indicates that students initially perceived their information literacy skills to be adequate. This perception is not supported by the Information Competence questionnaire.

### Information Competence Questionnaire Outcomes

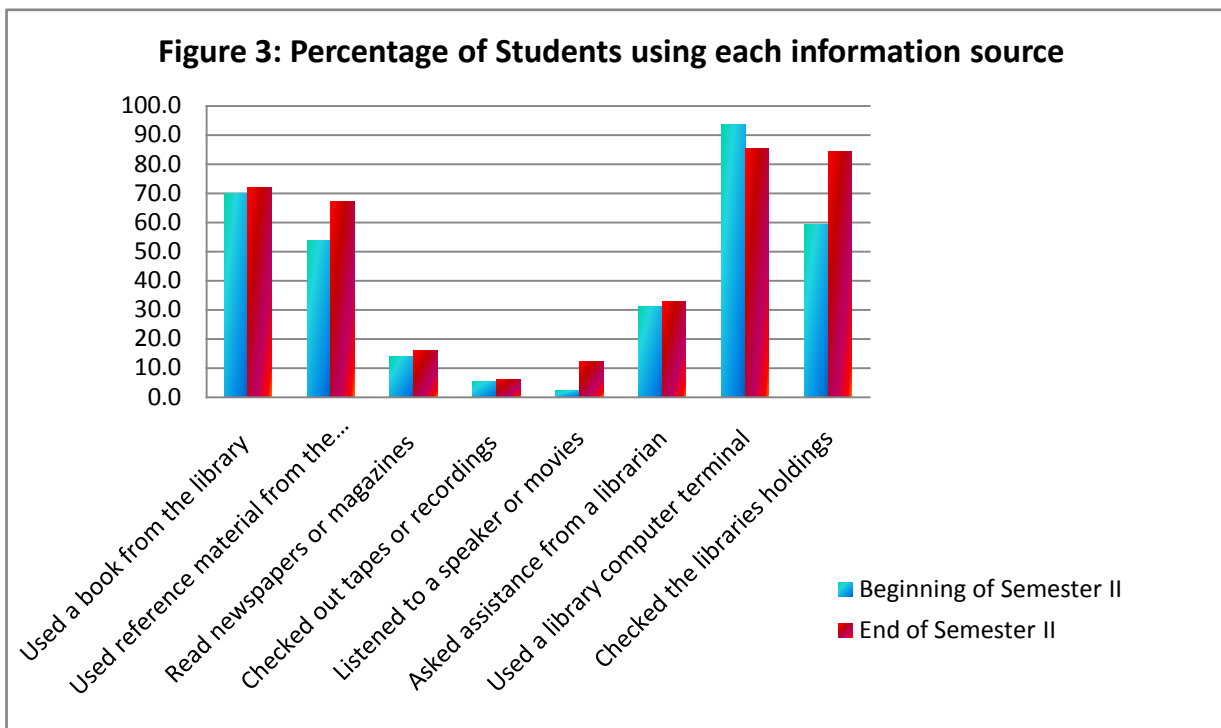
A number of differences were found between the pre and post-test surveys in terms of actual information literacy competencies. These were most obvious in using the web to source information, finding key information sources, and the perceived academic reputations and excellence between different sources of information. The following summary includes only the questions where major differences in the pre and post-test surveys were evident. Differences are presented as percentages to allow for the decrease in sample size from 95 students in the pre-test survey to 82 students who responded to the post-test survey.

Question 1 asked students to comment on their use of visits to the library for academic purposes. A 7% difference was found, demonstrating students were more likely to use the library at least once a week, compared with the beginning of semester.

Question 3 was concerned with how often students used books, journals, popular magazines and the web as information sources when completing course assignments. A considerable increase (45% difference) was found in the number of students who used journal articles to source information, compared with a marked decrease in the use of popular magazines and newspapers.

Question 4 asked students to indicate the library services they used in the past semester. For the pre-test this question related to library use while doing their *general* course in Semester I. For the post-test this question related to library use while doing their first *nursing* course during Semester II. Notable increases were found in the number of students who used reference materials, listened to a speaker or watched a movie, and checked the library holdings or resources to source information. Interestingly, there was a drop in the use of library computers. One reason for this drop could be that the students were using the Information Commons facilities rather than the library to access resources.

Figure 3 illustrates the differences in library services used pre and post-test.



Question 6 asked students to imagine they had to write an assignment based on scholarly information. There were marked differences in the responses pre and post-test. A 12% difference was found in students who believed the periodical index was a source of scholarly information. This is compared with a 21% difference in the number of students who indicated the web was not a good source of scholarly information. This signifies a stronger understanding of where to find academic information.

Question 7 related to perceived differences in the information sourced from the library compared with the web. A 17% difference was found between the pre and post-test in the increased number of students who believed information from the library, rather than the web, was selected through a review process.

Question 8 found a considerable change in the reasons why students use the library. A 43% difference was found demonstrating an increase in searching the web for information, compared with a 37% drop in the number of students who use the library to find magazines or journals.

Question 9 related to how students could tell if they were looking at a popular magazine. One sizable change (17%) was found in the number of students who no longer believed popular magazine articles were in-depth and included a bibliography. This further indicates a stronger understanding of academic compared with general information.

Question 12 asked students to state effective strategies for choosing research terms. There was a decrease (12% difference) in the number of students who thought highlighting the main terms and phrases was an effective strategy. This was compared to a 25% increase in the number of students who thought brainstorming synonyms, broader and narrower terms were effective strategies in gathering information.

Question 16 asked students to indicate how they would find good subject headings for articles in a periodical index. A sizable proportion of students in the post-test survey (23%) were found to use a thesaurus, and not an encyclopaedia, to source subject headings.

Question 22 was used to test the students' knowledge of how a journal article is cited. A marked increase (30%) of students answered correctly in the post-test survey.

Overall, it would appear a larger proportion of students have an improved understanding of: different types of literary and academic sources; where to source information; and effective strategies to gather specific and relevant information from reputable publications.

Despite the lack of change in students' *perceptions* of their information literacy skills across the semester, there was a marked improvement in the area of research skills and library usage. The results indicate an increase in confidence in the following areas: writing research papers; formulating a research topic; referencing information; using academic sources of information; and use of the library and its resources, including a sizeable increase in the use of the library catalogue. It was pleasing to note that the areas that the librarians and lecturers had focused on were the areas that showed the greatest improvements.

### **Online student evaluations of the library tutorials**

Overall, students' comments on the hands-on library tutorials were positive. Many students commented that they enjoyed the interactivity/student-centred learning approach. Some example quotes included:

- "Being able to do it ourselves instead of just being shown"
- "Definitely helped me get a better understanding of how to use the library catalogue";
- "The theory was applied to developing practical skills"
- "Wasn't boring like I'd expected. Learnt some helpful things"

The percentage of students who agreed/strongly agreed that the content of both courses was useful was 97.4%. Attendance at both tutorials was higher than in the previous year. The reason for the higher attendance can be attributed to the inclusion of library components into the assignments and the emphasis that lecturers placed on attendance.

### **Assignment Results**

The marks for assignment one in 2007 and 2008 were compared to see if there was any change due to the inclusion of additional information literacy components.

The comparison shows that while the top mark was the same in both 2007/2008 the lower mark was 10% higher in 2008. The average mark differed by 7.36% (2007 - 66.72% compared with 2008 - 74.08%). These results suggest that information literacy components had an impact on the lower percentile of the class.

The lecturers noted that between assignment one and assignment two of 2008 there was evidence of an increased use of APA with only minor referencing errors. There was also closer conformity to assignment layout guidelines.

### **General Observations**

From the librarians' point of view, there has been an improvement in the information literacy skills of the students attending the library tutorials. Ensuring that all students completed the online library tutorial and test before attending their first library tutorial meant that they already had improved understanding of library resources and basic search skills that could then be built on.

By the second library tutorial the librarians noticed that the students were more willing to answer questions, they were more confident with their answers, and they demonstrated an understanding of key concepts. This supports previous studies that indicate integrating information literacy into the curriculum has a positive effect on student's level of confidence.<sup>5, 6</sup>

As well as the benefits described above, the Subject Librarian has observed that the students now demonstrate more respect for her knowledge and opinion. The integration of library components into the course has meant that the students have had more contact with the Subject Librarian and have therefore built up more of a rapport with her. Also, by attending lectures and providing compulsory assignment-based tutorials, the Subject Librarian feels that the students have come to regard her as similar in status to their lecturer.

### **Conclusion**

The collaborative experience between the library and lecturers has been a positive one. Sharing expertise, working together to modify assignments, and discussing the generic information literacy skills that the students require has enabled the Subject Librarian, Learning Services Librarian, and nursing lecturers to work towards delivering a more cohesive information literacy programme.

The cooperation of the lecturers has been a critical element enabling the librarians to integrate information literacy components into the course. Also, having the cooperation of the lecturers has added value to what the librarians do. Their support meant the students saw the significance of attending the tutorials and of the overall research process.

The lecturers commented that the inclusion of the librarians in the work of the assignments and the development of information literacy with the students was invaluable. They felt that significant progress had been made in ensuring that the Year 1 students have sufficient information literacy skills appropriate to the academic work required in Year 2 of the programme.

The collaboration has enabled the librarians to design courses around what the students are actually expected to do in their course, therefore putting the learning into context. In turn, the librarians have been able to address some of the issues that the lecturers had identified and offer their assistance and expertise (e.g. referencing and plagiarism, web evaluation).

The success of this partnership has been based on several key elements that have previously been identified in the literature.<sup>14, 15</sup> Firstly, the nursing lecturers were open to new ideas and recognised the importance of information literacy. Secondly, the following factors were also important: mutual respect and trust; a pre-existing positive work relationship; competence and acknowledgement of each other's expertise; and mutual goals.

The project provided an opportunity for the librarians to rethink what they do and how they do it. Making the library tutorials and presentations more interactive and student-centred has been challenging but worthwhile. Activity based teaching has encouraged students to do some independent thinking, rather than just waiting to be told what to do next.

The incremental approach taken to the information literacy components worked well. Building on the students' skills across several tutorials and lectures, rather than using a 'one shot' approach meant the students were not overwhelmed with information. Skills were gradually built on at the point of need. Rather than the librarian repeating the same information, the students were encouraged to review prior learning in an interactive way. Fewer students needed one-on-one assistance compared to previous years. The results of the post-test confirmed that the incremental approach to information literacy had a positive effect.

The librarians and lecturers agree that overall the inclusion of information literacy into the nursing year one course was successful, and that the collaboration has been a positive experience. Based on this outcome, the librarians and lecturers have continued to work together and offer integrated and incremental information literacy to the first year nurses in 2009. This approach can only succeed if the librarians and academics continue to work as a team integrating information literacy throughout the Bachelor of Nursing programme.

### **Where to next – Phase II?**

Collaboration between the Library and the School of Nursing is ongoing. As Black, Crest, & Volland<sup>24</sup> suggested in their paper, in order to build a successful infrastructure for information literacy one must first create a strong relationship with faculty and work within faculty programmes. Having begun work with the Year 1 nursing lecturers in 2008, the information literacy partnership has since been extended in 2009 to include collaborating in a Year 2 ethics course and an evidence-based nursing course. This has enabled the librarians to build on the skills taught in the Year 1 pilot project with the same cohort of students. The librarians have observed an improvement in information literacy skills from Year 1, with the students demonstrating greater confidence.

The goal is to continue the collaboration and information literacy programme with Year 3 nursing students. The librarians will then do a more thorough evaluation of the project as a whole at the end of 2010. This will be based on the same cohort of students who will by then have had information literacy integrated over the duration of their three-year degree. By the end of their degree the students should possess the attributes listed in the University of Auckland Graduate Profile.

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**Appendix A – a *sample* of questions used in the activity sheet for assignment one**

**Assignment 1: Library Tutorial. *Topic: Role of the nurse as portrayed in the media***

**Search Strategy**

Write down your topic.		
Brainstorm keywords related to your topic		

**Finding Articles Using Library Databases**

**(NB: These questions were used for Index New Zealand)**

**CINAHL: Library website >> Databases & Article Searching >> 'C' >> CINAHL >> Connect**

What are the two keyword search options in the Cumulated Index to Nursing & Allied Health Literature (CINAHL)?
What is the truncation symbol in CINAHL?
What limits are available?
Based on your topic have a go at searching CINAHL.

***Are you happy with the results of your search? If not think about the following questions:***

Did you understand all the words in your assignment question?
How did you decide what words to search with?
How did you decide to combine the words when entering the search?
How did you decide which search in CINAHL to use?

## Looking at your Results

For those of you who have too many results – have you got any ideas for narrowing your search?

For those of you who have too few results – have you got any ideas for broadening your search?

## Broadening your search

For those with too few results try one of the following methods...

- Can you use the truncation symbol to expand the terms you are searching for?  
e.g. teen\$ = teen, teens, teenage, teenager, teenagers
- Are there any other synonyms for your search terms that you can use?  
If you are stuck, check some of your results for synonyms or try a thesaurus. e.g. teenagers or adolescents
- Are there broader terms that can be used to describe your topic?  
e.g. Liver Diseases instead of Hepatitis
- Remove the least important concept  
e.g. exercise and health instead of exercise and health and effect

Take note of how you have changed your search and what effect it had on the results

## Narrowing your search

For those with too many results try one of the following methods...

- Does your question imply that you may need to set a date limit?  
e.g. find the current trends... since 2000...
- Is there another concept that you can add to your search?  
e.g. heart disease and obesity and nutrition instead of heart disease and obesity
- Is there a narrower term that you can apply to your search?  
e.g. myocardial infarction instead of cardiovascular disease
- Should you be searching for a phrase instead of two separate keywords?  
e.g. “nursing care” instead of nursing and care

Take note of how you have changed your search and what effect it had on the results

How do you find whether the full text is available?

Find one good article and write down the citation. Citations include the author, article title, journal title, volume, issue, date and page numbers.

## Appendix B – example of web evaluation template for assignment 2

Nursing105 assignment 2: website evaluation		Example
<p>You must complete this evaluation form for <b>four</b> websites that you have selected to use for assignment 2. The URL and any other citations must be in APA referencing format.</p>		
<b>Source (APA style)</b>	<p>Nursing Council of New Zealand. (2008). Retrieved July 8, 2008, from <a href="http://www.nursingcouncil.org.nz/">http://www.nursingcouncil.org.nz/</a></p>	
<b>Authority</b>	Is this an organisation's or a personal website?	Organisation
	Are the owner's/author's name & contact details given? (You could check them for accuracy.)	Yes
	Does the owner/author list credentials that are relevant to the field? (If not try checking them on Google.)	Yes.They are the statutory authority in NZ. A Google search gave the same address from the NZ Ministry of Health website.
<b>Accuracy</b>	What evidence is given to support the information on the page?	Not applicable, the information on the site is their own.
	If appropriate, are references given? (You could check them for accuracy.)	Not applicable.
<b>Objectivity</b>	Is the owner/author likely to be objective?	Yes. There is nothing contentious on the pages; it is mostly just facts. It seems trustworthy.
<b>Currency</b>	Is there any indication when the page was last updated?	Yes, has a 'Site last updated' - 12 September 2008
	Do links on the page work?	Yes
<b>Audience</b>	Who is the page for and what is its purpose?	Aimed at nurses and provides information about practising in NZ
	Does it fulfil its purpose?	Yes
<b>Summary</b>	<p>A good practical source of information for professional nurses within NZ</p>	

**Appendix C – a sample of questions used in the activity sheet for assignment 2**

**Assignment 2 Library tutorial. Using CINAHL with Advanced Search:**

**Topic: EXPERIENCE OF THE HEALTH CARE SYSTEM IN NEW ZEALAND**

**Search Strategy**

Write down your topic in a sentence			
Brainstorm concepts/keywords related to your topic (write the main concepts along the top of the table; write synonyms underneath each of the main concepts)			
<b>Main concepts</b>			
	<b>Concept 1</b>	<b>Concept 2</b>	<b>Concept 3</b>
<b>Synonyms</b>			

<b>Using Advanced Search - What are Subject Headings?</b>
Type in a keyword/phrase (ensure 'map term to subject heading box' is ticked) and click 'search'. What keyword/phrase did you type in? Did it map to a subject heading? If so what is the subject heading for the keyword you typed in?
<i>Click on the 'Scope Note'. Write down any 'used for' terms and related terms.</i>
What is the Tree page?
What is the broader heading for your subject heading?
Does it have any narrower terms?
What are 'Subheadings'? What effect will they have on your search?
How many results did your first subject heading find? Now repeat the above process with your second concept
Type in a third keyword/phrase and click 'search'
From the 'Tree Page' are there any plus + signs beside any of the narrower terms? If so click on the +. What effect does this have?
What happens when you select the Explode box? What happens when you select the Focus box?
<i>From the main search page, combine all three subject heading searches together. What Boolean operator do you need to use?</i>
From your list of results find a good article and click on Complete Reference. Look at the subject headings for this article. Are there other subject that you could use for your topic? If so write them down.