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Not such strange bedfellows! Supporting learning by embedding information literacy skills in academic assessment

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Abstract

This paper examines the results obtained from a research project undertaken in 2004 as a collaboration between academic staff and resource library staff. The research project was undertaken to implement and evaluate the effectiveness of embedding information literacy (IL) skills into the discipline-specific and generic skills assessment requirements in selected undergraduate courses. The research used focus group interviews and whole class quantitative surveys based on the Information Skills Survey (ISS) developed by the Council of Australian University Librarians (CAUL), to explore students' acquisition of Information Literacy skills identified as desirable by the Australia and New Zealand Institute for Information Literacy (ANZIIL) and to evaluate the embedding approach. This paper discusses reasons for embedding information literacy into academic assessment and reports on some of the research results obtained and the learning outcomes achieved.

Introduction

The research I discuss in this paper was undertaken in 2004 by a small group of academic and library staff with assistance from a university teaching grant. Our aims were four-fold:

- to identify generic and IL skills considered valuable in teaching and learning theory and within university-authored quality assurance documentation;
- to map these skills on to a matrix which also included discipline-specific skills and learning objectives;
- to generate assessment tasks which reflected these skills; and
- to develop and administer an evaluative tool which could provide feedback on the success, or otherwise, of the embedded assessment. Specifically we developed pre- and post-assessment testing of volunteer students to assess their IL skill level in terms of Australian and New Zealand Institute for Information Literacy (ANZIIL) mastery and discipline-specific knowledge.

This last aim addresses an under-represented approach to assessing IL embedding. Few examples exist of IL research targeting the disciplinary content and learning outcomes within IL embedding programmes (Bruce, 2001).

The research project assessed a first- and third-year undergraduate paper. At Otago University a 'paper' represents a single course of academic study, is usually a semester in duration and in the Humanities division contributes six or eight points towards a one hundred and twenty point undergraduate degree. In this discussion I concentrate on a first-year sociology paper, outlining the reasons for establishing the assessment/IL matrix and providing some results from the evaluative data.

The context

The papers evaluated in our research are part of a small sociology programme introduced in 2002. By 2004 six papers were offered across all three undergraduate years. In 2005 two further papers were introduced to complete the offerings for the sociology major.

From the programme's inception, teaching staff and library staff collaborated in devising the IL package embedded into the assessment for five of the eight papers comprising the subject major. Such collaboration is widely advocated: see, for example, Bruce and Candy (1995); Hart, McCarthy, and Peacock (2003); Meldrum and Tootell (2004). By 2003 a more formalised and structured approach was desirable due to increasing student numbers and the growing number of new sociology papers being taught. The university library already offered comprehensive generic user education programmes and continues to actively promote the embedding of IL in academic courses. It seemed logical, therefore, that library/academic collaboration would continue in the research project outlined here. At the conclusion of the teaching of the two target papers in mid-2003, work began on embedding IL, with the aim of teaching them fully embedded in semester one, 2004.

The role of information literacy in generic academic skills

Debate continues about defining information literacy. It is generally agreed, however, to be a learning outcome focussing on the lifelong ability to recognise the need for, locate, evaluate, and effectively use information (ALA, 1989). Because IL has emerged as part of a paradigm shift (Grassian & Kaplowitz, 2001; Thompson, 2002) in the philosophy of education towards student-centred learning (Kuh & Gonyea, 2003), and despite its information science and bibliographic instruction origins (Johnston & Webber, 2003), the concept now features in much education-related academic literature (Rader, 2002). Today, therefore, IL represents a cornerstone of both librarianship (Marcum, 2002) and discipline-related pedagogy within the higher education community. In an information society all students need to be information literate if they are to stay up-to-date with developments in a particular subject (Breivik, 1998). Lifelong learning is therefore intrinsically linked to the emerging concept of information literacy (Candy, 2002).

Lifelong learning is a key graduate attribute, featuring prominently in [the University of Otago Teaching and Learning Plan \(2002\)](#), as it does elsewhere (Bundy, 1999; Down, Martin, & Hager, 1999). Lifelong learning refers to the continuation of learning throughout the lifespan of an individual (Candy, Crebert, & O'Leary, 1994). More specifically, however, it emphasises abilities to develop new skills and understand new concepts beyond the period of formal education traditionally associated with learning (Jenkins, Jones, & Ward, 2001). It is now widely accepted both as a social and economic imperative (Leader, 2003), featuring prominently in both popular and academic literature, and becoming increasingly important as individual needs have adapted to the new demands in an emerging information society. The term 'information society' refers to one in which the creation, processing and consumption of information have become the most significant socio-economic activities (Johnston & Webber, 2003).

ANZIIL identifies six key skills exhibited by the information literate individual. These comprise the ability to:

- recognise the need for information and determine the nature and extent of the information needed;
- find needed information effectively and efficiently;
- critically evaluate information and the information-seeking process;
- manage information collected or generated;
- apply prior and new information to construct new concepts or create new understanding; and,
- use information with understanding and acknowledge cultural, ethical, economic, legal, and social issues surrounding the use of information.

Such abilities have long been considered fundamental to academic study and tertiary students are encouraged to develop them early in their undergraduate careers. And yet these abilities have not traditionally been well integrated into curriculum design or delivery (Bath, Smith, Stein, & Swann, 2004). Until recently, for example, traditional library education practices involving IL ~~such as user education and bibliographic instruction~~ have been add-ons undertaken by librarians rather than academic teaching staff. A more effective method is to embed skills and concepts into academic curricula. Growth in initiatives to embed IL has been closely associated with proliferating IL standards, promoting agreement about the meaning of terms (Catts, 2002) and facilitating the application of IL theory. In New Zealand the most widely used standards are those prescribed in the ANZILF. This framework is actively promoted at the University of Otago and other tertiary education institutions throughout New Zealand. ~~User education involves a situation-specific response to a particular information need and is similar to the long-established practises of ‘bibliographic instruction’.~~

‘Embedding’ in this context refers to the process of aligning IL objectives with the learning outcomes of an academic course or programme. Embedding “information skills into a subject integrates it into the content, learning activities and delivery modes of the subject” (Hine, Gollin, Ozols, Hill, & Scoufis, 2002). Students are much more likely to retain IL skills, and hence develop into lifelong learners if IL is presented as integrated within a subject rather than as a clip-on (Bruce, 2000). Embedding IL into the curriculum has only recently become widely accepted (De Jager & Nassimbeni, 2002) and many university-based librarians are now working in conjunction with academic staff towards this goal.

Simply aligning IL and academic content is unlikely to achieve independent and active learning outcomes, however, if the course content and delivery is not in turn effectively embedded within a process of generic and discipline-specific skills development. IL cannot remain a stand-alone skill but should, instead, be considered one among a series of important generic skills to be acquired as early as possible in an individual’s tertiary education. Viewed thus, IL becomes a cornerstone of an individual’s emerging learning process, maximised by integrating generic skills, academic curricula content, and expected graduate attributes into a matrix of teaching and learning interaction (see e.g., Bath et al., 2004; Boyatzis, Cowen, & Kolb, 1995; Clanchy & Ballard, 1995; Diamond, 1998; Drury & Taylor, 1999; Golding, Marginson, & Pascoe, 1996; Hattie, Biggs, & Purdie, 1996; Kemp & Seagraves, 1995; Misko, 1995; Nightingale et al., 1996; Oliver, 1998; Wallace, Shorten, Crookes, McGurk, & Brewer, 1999). Academic assessment tasks have traditionally been viewed both as the vehicle by which this process is delivered and as the tool by which its efficacy may be tested.

Aligning information literacy, generic skills and academic assessment

Assessing students’ learning outcomes was traditionally achieved by mixing internal (assignments) and external (examinations) assessment tasks. In this model, however, assessment remains a set of stand-alone hurdles to be overcome rather than an integral part of the students’ learning processes. Debates about the relative merits of formative and summative assessment further complicate the choices available to teaching staff. Although these debates fall outside the scope of this paper, it is noteworthy that whichever type of assessment is chosen, *what* is assessed must be adequately integrated into course objectives for deep rather than surface learning to occur (Biggs, 1999).

Students engage in surface learning when they complete the assessment or learning task as quickly and as easily as possible whilst still appearing to meet the necessary requirements. Surface learning is often also encouraged by teaching and assessment methods that are not aligned to teaching objectives, which engage low-level cognitive activities, and which focus on content rather than process, meaning, or understanding. Deep learning is concerned with higher-level cognitive approaches, however,

emphasising engagement with the task at meaningful and appropriate levels, with first principles, and with conceptual processes (Biggs, 1999). These attributes arise in relation to teaching and learning contexts. They are not fixed individual characteristics. Biggs (1999) lists five contextual components:

- the curriculum we teach;
- the teaching methods we use;
- our assessment procedures and methods of reporting results;
- the climate we create in our interactions with students; and,
- the institutional climate, rules and procedures we must follow.

Although the last two may be only partially in our control, it is vital to integrate the first three. Desirable approaches to learning are nurtured by appropriate course design, teaching methods and modes of assessment (Gibbs, 1997; Sadlo & Richardson, 2003).

With these goals in mind, teaching and library staff collaborated to establish assessment in as fully integrated a manner as possible. For instance, when considering the benefits of embedding IL into the sociology programme, the teaching staff initially sought answers to two related questions:

What interferes with effective, independent student learning?

Could any blocks be alleviated through innovative approaches to assessment in which academic, IL and generic writing skills are parts of a fully the embedded process?

In other words, how could the first-year paper provide a deep learning experience for students?

Krause's research into student perceptions of academic challenges at first-year level indicates that the written assignment represents a significant hurdle to be overcome. Failure at this hurdle is a common cause of attrition (Krause, 1998; Krause & Duchesne, 2000). Many student essays are poorly resourced, limited in scope and only partially engaged with the topic. Historically, such failures have been attributed either to individual unsuitability and deficiencies, or to lack of aptitude for academic study (Boykin, 1994; Levin & Levin, 1991; Nagda, Gregerman, Jonides, Von Hippel, & Lerner, 1998). Less common historically, but receiving increasingly more attention however, is the view that student failure results from educational experiences which are insufficiently responsive to students' needs. Student confusion contributes to partial uptake of academic socialisation models and notions of generic or transferable writing skills across the university environment are often unsupported by research findings (Lea & Street, 1998). The literature on undergraduate and IL teaching suggests a number of possible causes. For a discussion of such interferences see, for example, Bruce, Chesterton, and Grimison (2002); Lea and Street (1998); Levin and Tempone (2002); Linhart (2002); Ragains (2001); Spinks (2000); Vardi (2000). Unclear instructions to students (Ramsden, 1992) are often counterproductive, as are instances where instructions for assessment tasks in one discipline contradict those in another discipline (Vardi, 2000). These problems indicate that the actual learning situation may fall short of the rhetoric about the first year of university being a time to establish independent study patterns (Levin & Tempone, 2002) and to be inducted into the culture of the academy (Lea & Street, 1998, p.159) as a learning community (Krause, 2001).

Although some first-year students are not always ideally prepared for tertiary study, the first written assignment is an ideal opportunity to "provide an anchor for the student during the often difficult transition into the academic writing process" (Krause 2001, p. 150). The most effective university transition experiences are those facilitating integration into the university community (Krause, 2001). Students have different levels of research and writing skills. They also have different expectations of assessment – different from their peers but also from their teachers in many cases. Students are assessment driven, seeing the curriculum as defined by the assessment, and because they give higher status to what is assessed (Lupton, 2003), teachers can signal the importance of generic, IL and discipline-specific skills by assessing them. *How* they are assessed, however, provides valuable opportunities for making assessment a learning process (Lupton, 2003; Nulty, 2003). Deep learning

may be encouraged, and induction into the academic learning community facilitated by supporting constructive learning activities. The academic challenges of a typical first-year written assignment (an essay) may, for example, be broken down and incorporated into separate assessment tasks in which IL skills, generic and discipline-specific skills are integrated.

An Otago example

My personal teaching experience provides numerous examples of poorly prepared student assignments. Mismatches between staff assessment expectations and those of the students are commonplace (for discussion of this issue, see Bate & Sharp, 1990; Lea & Street, 1998; Radloff & de la Harpe, 2001; Vardi, 2000). Lack of clarity from the marker contributes to blocking independent learning outcomes (Spinks, 2000). In particular, two related problems occur with students' attitudes towards internal assessment. First, many students appear reluctant to use the library facilities and thus cannot utilise even traditional information-seeking strategies. Second, and perhaps consequent upon the first, significant numbers do not appear to prepare their essays carefully enough. These problems suggest that students are taking a surface learning approach to their assignments, meeting neither IL nor discipline-specific standards adequately.

Library anxiety contributes to the fact that many students do not appear to discover research tools such as full-text databases or learn the skills of web-based research until their undergraduate degrees are nearly completed (Ellis & Percy, 2000). Although the problem of library anxiety can be overcome by taking the opportunity in lectures and tutorials to encourage students to use the library, academic staff and librarians must collaborate to find effective strategies to do so. They then face the related problem of how to encourage their students to utilise library facilities appropriately to research and organise their assessment resources. Central problems occur in establishing undergraduate students as apprentices in the craft of academic writing (Spinks, 2000). At least three dimensions operate in the problem of student library use. First, the issue of library anxiety must be overcome. Second, students require the key information literacy skills already identified. Third, students require the skills to assemble their resources to produce essays that effectively demonstrate generic and discipline-specific skills and knowledge.

When establishing the first-year paper, I began with the hypothesis that students might be willing to acquire such key skills (and helped to do so) if they were given a fully integrated assessment programme which included discipline specific library instruction, clear instructions (Radloff & de la Harpe, 2001), achievable assessment goals, and directly correlative rewards for successfully attaining the goals set. I wanted to ensure, therefore, that these essential components were fully embedded into the paper from the outset. For example, students in SOCI 101 begin their semester with a library tutorial to introduce them to the university's sociology holdings, discipline-specific databases, and search strategies. This tutorial is aligned to particular course requirements and the requisite IL level. A short library tour orients students to the physical locations of sociology reference holdings, books, journals and the reserve collection. Students then complete a hands-on computer-based session where they learn to access discipline-specific databases with key word, subject and author/title searches; to conduct searches both through national archives and world-wide web search engines; and to distinguish between academic and non-academic sources. This session is taught in the library by both library and academic staff with follow-up provided in the next academic tutorial to reinforce the academic value of IL skills. An on-line quiz on library skills is the first assignment for students to complete. Devised by a resource librarian, this quiz tests content and process learning. IL skills are prioritised in this manner and their importance in the sequential process culminating in the end-of-semester assignment is emphasised.

Throughout the semester, assessment instructions for the first-year paper are provided in several formats. Time is made available both in lectures and tutorials for students to ask their own questions about the assessment. Written and electronic tips are also provided, including active computer links to Student Learning Centre material. Students are made aware of the marking criteria, academic objectives and information literacy criteria involved in all assessment tasks from the start of the

semester. Clear and achievable assessment goals are set and internal assessment in the paper is structured so that students get their feet wet (Spinks, 2000) early in the semester with a series of short pieces delivering cumulative skills which are generic in nature but presented in subject-specific contexts (Hattie et al., 1996), ensuring that students remain aware of the sociological application for the skills they are acquiring. The library test is the first of these.

Following the library assignment, students continue to develop their skills leading up to an essay of 1500-2000 words due in the last weeks of the semester. They begin this graduated assessment by choosing race, class or gender as a social division and then choosing a topic through which they will examine its impact. For example, a student may wish to examine the impact of class on educational achievement. Students next use their IL skills to identify both an academic and a non-academic resource related to their chosen topic but one which is not provided in the required reading. They provide a short summary of the authors' thesis and main points, assess the usefulness of the reading for their chosen topic, and indicate how they found the source. At the beginning of each summary, students give a topic statement that will eventually form their essay introduction. This statement addresses the problem they will investigate and their perspective on it. Tutors provide extensive feedback on each of these short pieces both in terms of their actual match with assessment criteria and in terms of how these assessment pieces fit together in the larger assessment task – the essay. Students then provide a bullet point plan of their essay based on the topic chosen at the beginning of the semester. The bullet point plan is prefaced by the final version of the topic statement developed over the two summary exercises. The topic statement will then form the basis of their essay introduction. Upon completion of the internal assessment for this paper students attain all six ANZIIL standards at an elementary level. If students continue on to take other second- and third-year papers they attain these standards at an advanced level.

Assessing the embedding

This process raised difficult and complex problems. For instance, would the embedding work? How could the success of this undertaking be measured? How would the academic staff know if their strategies to overcome students' library anxiety were effective? Would the graduated series of task increase students' information literacy skill levels? Such questions have only recently become the focus for IL research. See for example, Todd's 1996 longitudinal study in secondary education, which demonstrates the effectiveness of an integrated approach to IL and classroom teaching. At tertiary level, Young and von Seggern (2001) document studies of the effectiveness of library and academic staff collaboration and the learning outcomes produced. Existing research in this area primarily examines foundation courses, however, and there is very little in the way of evaluative research extending to IL in other types of academic programme. The Otago research team was faced, therefore, with the problem of designing a project to evaluate not only the relatively well-documented format for IL achievement, but also the relatively unexplored terrain of assessing discipline-based learning outcomes delivered alongside IL skills. Numerous possible formulae exist for aligning information literacy skills with academic assessment tasks.

Any framework for alignment requires the inclusion of:

- appropriate graduate outcomes identified by the University of Otago's Teaching and Learning Plan (2002);
- the six key ANZIIL standards noted above; and
- an individual paper's specific sociological learning objectives, its teaching and learning objectives, and its assessment tasks.

The ANZILF was used to select appropriate IL competencies. Aspects of each assessment task were classified as either elementary, intermediate or advanced in terms of the relevant IL learning outcome. The result of this alignment exercise is depicted in Table 1.

Table 1. *Aligning ANZIIL standards and learning outcomes with SOCI 101 assessment tasks*

ANZIIL standard	ANZIIL Learning Outcomes (A.L.O)	SOCI 101 Assessment	ISS Statement
The information literate person:			
1. recognises the need for information and determines the nature and extent of the information needed.	1.1 defines and articulates the information needed;	RP/Elementary to SP/Intermediate RP/Intermediate	The ISS Survey does not formulate questions which specifically address this standard. In the SOCI version we asked these additional questions: #21. When confronted with something I don't understand I ask for help. #22. I can identify the appropriate sources of information required for assessment tasks. #23. I can distinguish between appropriate and inappropriate sources of information for specific academic requirements.
	1.2 understands the purpose, scope and appropriateness of a variety of information sources;	RP/Intermediate	
	1.3 re-evaluates the nature and extent of the information needed;	LT/Elementary to RP/Intermediate	
	1.4 uses diverse sources of information to inform decisions.		
2. finds needed information effectively and efficiently.	2.1 selects the most appropriate methods or tools for finding information;	LT/Elementary to RP/Intermediate	#3. I use a combination of search tools including library catalogues and web search engines. #12. I have a system for searching for information on a subject. #16. If my searching returns too much irrelevant information, I change my keywords. #19. I decide how best to find the information I require for a particular use.
	2.2 constructs and implements effective search strategies;	LT/Elementary to RP/Intermediate	
	2.3 obtains information using appropriate methods;	LT/Elementary to RP/Intermediate	
	2.4 keeps up to date with information sources, technologies, access tools and investigative methods.		
3. critically evaluates information and the information seeking process.	3.1 assesses the usefulness and relevance of the information obtained;	RP/Elementary	#5 I critically evaluate each information source I use. #8. I evaluate information I read for criteria including accuracy and relevance. #11. In selecting information I evaluate the quality of the information. #14. I revise my research plan and strategy if I need to gather more information or data.
	3.2 defines and applies criteria for evaluating information;	RP/Elementary	
	3.3 reflects on the information seeking process and revises search strategies as necessary.	LT/Elementary to RP/Intermediate	

Abbreviations: LT – Library test; RP – Research phase; SP – Summary exercise; EP – Essay plan; E - Essay

Table 1. *Continued*

ANZIIL standard	ANZIIL Learning Outcomes (A.L.O)	SOCI 101 Assessment	ISS Statement
The information literate person:			
4. manages information collected and generated.	4.1 records information and its sources; 4.2 organises (orders/classifies/stores) information	SP/Elementary to E/Intermediate SP/Elementary & EP/Elementary to E/Intermediate	#1 I keep accurate details of everything I read. #2. I have a system that helps me organize the information I need. #6. When I make notes about information I am reading, I include the author and the title. #9. I develop a system to keep track of the information I find and its sources.
5. applies prior and new information to construct new concepts or create new understandings.	5.1 compares and integrates new understandings with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information; 5.2 communicates knowledge and new understandings effectively.	EP/Elementary to E/Intermediate	#4. When I get a new idea, I work out how to explain it effectively. #15. I present the information in a medium that suits the audience. #17. When I consider information I have found, I state the key ideas in my own words. #18. I compare information as I'm reading with what I know.
6. uses information with understanding and acknowledges cultural, ethical, economic, legal, and social issues surrounding the use of information	6.1 acknowledges cultural, ethical and socioeconomic issues related to the access and use of information; 6.2 recognises that information is underpinned by values and beliefs; 6.3 conforms with conventions and etiquette related to the access and use of information; 6.4 legally obtains, stores and disseminates text data, images, or sounds.	RP/Elementary & E/Intermediate LT/Elementary, RP/Elementary & E/Elementary	#7. I reference websites that I have used in my assignment. #10. I apply the University of Otago's policies regarding plagiarism. #13 I need to keep relearning because life is constantly changing. #20. I comply with stated restrictions on the use of intellectual property.

Abbreviations: LT – Library test; RP – Research phase; SP – Summary exercise; EP – Essay plan; E - Essay

A structured approach to assessing the embedding was selected to reveal if there were areas of student performance needing improvement, if students had retained and effectively applied knowledge and skills from course to course, and if instructional strategies and learning outcomes were well aligned (Rockman, 2002). Assessing improvements in IL is notoriously difficult (Meldrum & Tootell, 2004). We chose to use an existing assessment questionnaire designed by staff at Queensland University of Technology (QUT) Library in Brisbane.

Data collection: Surveys and focus groups

Clearance to proceed with the evaluation project was obtained from the University of Otago Human Ethics Committee for Ethical Approval of a Research or Teaching Proposal Involving Human Participants. Because our research involved students, we also took particular care to ensure that participants were fully aware:

- that no prejudice would accrue from their answers to research questions, their decision not to participate in or to withdraw from the project, and
- that the marks they received for their assessment would not be influenced in any way by their participation in the project.

All students enrolled in the first-year course (total roll 197) were invited to participate in the research during initial lectures at the beginning of semester one. Those who agreed could elect to participate in the research at two levels.

Level one involvement entailed completing whole class surveys. Two different surveys were used. The first, specifically targeting IL skills and based on the use of the CAUL Information Skills Survey (ISS) (<http://www.anu.edu.au/caul/index.html>), was administered once at the beginning of semester and then again at the end of semester. The second, a more course-specific survey administered at the end of the semester, sought to determine students' opinions about the course structure, content and assessment tasks, thus targeting the embedding/integration more generally. Both survey types were administered during lecture time, and although handed out to all students, were only completed by students who chose to participate in the research. No identifying information on participants was collected at level one.

Qualitative research is often criticised for its vulnerability to self-reported bias. Although self-reporting is one of the most practical sources of useful data for such processes as time management, for example (Kuh & Vesper, 1997), the potential for overly positive representation of study and learning habits remains problematic for researchers. To minimise this possibility we utilised both quantitative and qualitative methodologies. Two types of quantitative surveys were undertaken, the first at the beginning of semester and the second eleven weeks later, at the end of semester. The time lapse and likely associated memory lapse between the two identical surveys would help to ensure that students answered honestly rather than give the expected answer. Although self-reported bias cannot be entirely eliminated, we hoped that the multi-methodology approach provide sufficient triangulation to minimise self-reported bias.

Level two involvement required volunteers to participate in five focus group interviews conducted over the course of the semester. Only participants that could make the pre-set times for the interviews were included in the focus groups because of the research group's prior teaching, studying and working commitments. The focus group interviews were conducted in sound proof, group study rooms in the University of Otago Library to foster the link between the first-year paper, the research and the library. Contact between the interviewer and the participants outside interview times occurred via email, primarily to confirm or reschedule interview times rather than to exchange information. Focus group interviews were initially planned to take place before and after each of the assessment tasks needed to complete the course. This could not be achieved, however, because class extensions and overlap of assessment had to be accommodated. Research participant numbers varied during the

passage of the research as course loads, course changes and work commitments affected students' free time. Five students agreed to participate at level two. One participant who withdrew because of a timetable clash agreed to participate in one-to-one interviews.

In the focus group interview

[The Focus groups](#)

participants were asked to complete a general questionnaire on simple information literacy and library familiarity tasks. This activity provided a point of comparison to the ISS-generated responses gathered during level one involvement. It also enabled focusing questions to be asked in keeping with focus group practice and allowed more assessment-specific quantitative data to be gathered. The questions were designed around general actions that the students might need to take when completing research for sociology subjects. Students were asked about their courses, previous study and experiences at university. They were also asked about whether or not they had gained an understanding of the theoretical direction and assessment tasks in the paper from; information contained in the course outline. Participants were invited to discuss what the assessment involved for them in terms of time, research, writing and knowledge; what plans they had for approaching the tasks; and where they thought any difficulties might arise. Lecture and tutorial material was also considered, particularly any instructions regarding the assessment.

A higher degree of confidentiality was felt to be necessary for a final one-to-one interview of focus group members because participants were asked to personally reflect on their tutors and lecturers. This interview would sum up that student's experiences of the entire course. Participants were questioned about their experiences with information literacy throughout the course and asked to reflect on any changes in their research, writing and presentation skills they felt were a result of their participation in the course as a whole. They were asked to compare and contrast their experiences in the sociology course with their previous or concurrent courses of study and given the opportunity to suggest ways they thought the course could be improved and to identify components that they felt were particularly beneficial.

Preliminary results

Table 2 shows the two complete ISS survey data sets. In a class of 197 students, 145 responded to survey 1 and 135 to survey 2. Overall, the data supports the research team's assumption that embedding the IL skills into the course assessment would improve students' IL skill levels.

Improvement has not been shown in every category. For example, survey 2 responses to ANZIIL Standard 5 ISS statement #15 ("I present the information in a medium that suits the audience") are slightly fewer in the "Always" category. This result suggests that students were less sure of their abilities in this respect at the end of semester than they had been at the beginning. This may have been the result of confusing messages from teaching staff or simply a result of the students themselves realising that they were not as good at this as they thought they were at the start of semester. Trends across each set of responses to individual ISS questions show an increase in "often" and "always" responses in the second survey, however, and a corresponding decrease in the "never" and "seldom" responses. Pleasing results are observable in ANZIIL Standard 4, where significantly more students in survey 2 felt confident about their abilities to keep records of research results. This trend is also noticeable in Standard 5, where deep learning improvements are shown in the abilities to compare new with existing information and information processing by explanation. Standard 6, particularly in website referencing abilities, is also markedly improved by the end of the semester.

Improvement is more marked in students for whom 2004 was their first year at university. For example, Tables 3 and 4 depict responses to all ISS questions relating to ANZIIL Standard 2 and 5 from this group.

Percentages of those who checked the “Always” category in response to all statements significantly increased in survey 2, indicating that by the end of the semester students were more aware of the need to deploy IL skills when undertaking their research. This trend is particularly marked in responses to ISS statement 3: “I use a combination of search tools including library catalogues and web search engines.” These results demonstrate a successful academic socialisation process during the semester and are supported by results from the second, more course-specific, end-of-semester survey. In this second end-of-semester survey, those students for whom 2004 was their first year at university and who were aged between 18 and 20 (73 students) showed significantly positive responses to their first-year experience in SOCI 101. Of this group, 87.7% attended the library tutorial and 91.8 attended lectures all or most of the time. Tutorial attendance was slightly less with 77.7% attending all or most of the time. Although study habits in this group were variable, one surprising result was that 46.7 % of respondents began their essay a week or more before it was due. This result contradicts a common perception held by academic teaching staff that poor essays result from insufficient preparation.

Table 2. *ISS statements and survey results in sociology first year class—all groups*

ANZIIL Standard	ISS Statement		S1 %	S1 %	S1 %	S1 %	S2 %	S2 %	S2 %	S2 %
The information literate person:		ALO	N	S	O	A	N	S	O	A
1. recognises the need for information and determines the nature and extent of the information needed.	The ISS Survey does not formulate questions which specifically address this standard. In the SOCI version we asked these additional questions:									
	#21. When confronted with something I don't understand I ask for help.		0.7	29	45.5	23.4	3.0	25.93	43.71	26.67
	#22. I can identify the appropriate sources of information required for assessment tasks.		0.0	21.4	60.0	16.6	0.0	11.85	59.26	25.93
2. finds needed information effectively and efficiently.	#23. I can distinguish between appropriate and inappropriate sources of information for specific academic requirements.		0.7	17.2	50.3	29.0	0.0	8.15	57.03	36.60
	#3. I use a combination of search tools including library catalogues and web search engines.	2.1	2.1	29.7	49.0	19.3	0.0	33.3	58.02	4.93
	#12. I have a system for searching for information on a subject.	2.1	5.5	32.4	44.1	17.2	2.06	20.0	46.89	24.13
	#16. If my searching returns too much irrelevant information, I change my keywords.	2.2	2.1	11.8	25.7	60.0	0.74	7.4	23.70	66.66
3. critically evaluates information and the information seeking process.	#19. I decide how best to find the information I require for a particular use.	2.3	0.7	17.2	49.7	30.3	0.0	15.56	51.85	31.11
	#5. I critically evaluate each information source I use.	3.1	9.7	53.1	26.9	10.3	5.92	40.0	42.96	9.63
	#8. I evaluate information I read for criteria including accuracy and relevance.	3.2	7.6	36.6	38.6	17.2	2.22	23.71	51.11	22.22
	#11. In selecting information I evaluate the quality of the information.	3.1	1.4	11.7	55.9	31.0	1.48	8.15	48.15	41.50
	#14. I revise my research plan and strategy if I need to gather more information or data.	3.3	3.4	26.2	54.5	13.8	4.44	19.26	48.89	25.93

Abbreviations: AOL – ANZIIL Learning Objectives; S1 – Survey 1; S2 – Survey 2; **N** – Never; **S** – Sometimes; **O** – Often; **A** – Always.

Table 2. *Continued*

ANZIIL Standard	ISS Statement	ALO	S1 %				S2 %			
			N	S	O	A	N	S	O	A
4. manages information collected and generated.	#1. I keep accurate details of everything I read.	4.1	16.6	60.7	18.6	4.1	8.89	48.14	36.30	6.67
	#2. I have a system that helps me organize the information I need.	4.2	4.8	35.9	46.2	13.1	5.92	31.11	46.67	16.30
	#6. When I make notes about information I am reading, I include the author and the title.	4.1	6.9	35.9	29.7	27.6	1.48	20.0	34.81	42.96
	#9. I develop a system to keep track of the information I find and its sources.	4.2	11.7	46.2	31.0	11.0	5.18	27.41	48.14	19.26
5. applies prior and new information to construct new concepts or create new understandings.	#4. When I get a new idea, I work out how to explain it effectively.	5.1	4.8	43.4	37.2	13.8	1.48	31.11	50.37	16.30
	#15. I present the information in a medium that suits the audience.	5.2	1.4	16.6	53.1	26.9	0.74	18.52	57.77	22.22
	#17. When I consider information I have found, I state the key ideas in my own words.	5.1	0.0	16.6	49.7	33.8	0.0	11.11	50.37	37.77
6. uses information with understanding and acknowledges cultural, ethical, economic, legal, and social issues surrounding the use of information	#18. I compare information as I'm reading with what I know.	5.1	1.4	19.3	46.9	31.7	0.74	13.33	51.11	34.07
	#7. I reference websites that I have used in my assignment.	6.4	4.1	9.7	31.0	54.5	0.0	5.18	22.22	71.85
	#10. I apply the University of Otago's policies regarding plagiarism.	6.3	3.4	4.8	11.7	75.2	0.0	1.48	22.22	76.30
	#13. I need to keep relearning because life is constantly changing.		0.7	15.9	37.9	44.1	3.0	11.85	42.22	42.96
	#20. I comply with stated restrictions on the use of intellectual property.	6.4	3.4	10.3	33.8	46.2	1.48	11.11	40.74	42.96

Abbreviations: AOL – ANZIIL Learning Objectives; S1 – Survey 1; S2 – Survey 2; N – Never; S – Sometimes; O – Often; A – Always.

Table 3. ANZIIL Standard 2 – Responses from students for whom 2004 was their first year at University

	Never	Sometimes	Often	Always
ISSQ3(S1)	3.7	33.3	58.0	4.9
ISSQ3(S2)	2.63	19.73	43.32	34.21
ISSQ12(S1)	6.2	32.1	43.2	17.3
ISSQ12(S2)	3.94	22.36	53.92	19.73
ISSQ16(S1)	0	12.3	24.7	61.1
ISSQ16(S2)	1.32	9.2	22.37	65.79
ISSQ19(S1)	0	25.9	48.1	23.5
ISSQ19(S2)	0	15.79	53.95	27.63

Table 4. ANZIIL Standard 5 - Responses from students for whom 2004 was their first year at University

ISS	Never	Sometimes	Often	Always
Q4(S1)	6.2	51.9	34.6	6.2
Q4(S2)	1.32	38.16	48.68	10.53
Q15(S1)	1.2	17.3	54.3	24.7
Q15(S2)	0	21.05	55.26	23.68
Q17(S1)	0	22.2	51.9	25.9
Q17(S2)	0	13.16	55.26	31.58
Q18(S1)	1.2	25.9	46.9	24.7
Q18(S2)	1.32	17.1	56.58	25.0

Responses in the fourth focus group session suggested that the reasons for this unexpectedly organised approach was the essay plan having to be submitted two weeks before the essay was due. These results support the supposition that better preparation might be encouraged by cumulative assessment tasks. One focus group participant said that having to be organised to do the essay plan and having already started the research some weeks before meant that the task of writing the essay itself was less daunting.

In the focus group interview one participant commented favourably on the IL component:

This information literacy though, it's fabulous, I can't speak highly enough of it because those kids that are coming straight from school, you know, obviously they're the clever ones but for people who haven't done it before or taken much interest in it, it must be pretty hard to know where to start.

S/he felt that there had been an increase in confidence in using IL skills, saying "I'm getting a lot more confident using journals now whereas before it was pretty hit and miss whether I found things." Data from the second course-specific end of semester survey show that 45.7% of respondents used at least one journal article for their summary exercises, while a further 57.8% used a book or book chapter.

These statistics indicate that the embedded IL strategies were successful in their aim to foster constructive academic behaviour patterns, as does the 50.8% response to the question “Do you think this paper has helped you to be a better researcher?”.

Unexpectedly, however, some students found that the emphasis on electronic research skills was a little daunting. One student said:

I always find it quite a pain to try and reference the websites and things and I’m not sure still how you reference it within an essay. It’s really difficult because sometimes you haven’t even got an author. That puts me off using them [Internet resources] and the authenticity of them as well.

This reluctance indicates a skill component that needs to be better presented to students and could account for the fact that in this class there were some students for whom the IL component embedded in the course failed to generate any significant change in search strategies between surveys. For example, the percentage of “Always” responses to the ISS statement “I use a combination of search tools” decreased by 14.37% between the two ISS surveys.

Overall, however, results suggest that the IL components were successful pedagogically as well as in IL terms. One participant thought that although some students might not like the structured nature of the first-year assessment, “they got round to it and thought ‘this really helped me in the essay.’” Another said that “the idea is so that you can get feedback from the first [assignment] so that you can improve the second. It gave you confidence to go onto the essay.”

In response to questions about the assessment structure, one participant replied:

I guess it gave you kind of a structured way of approaching the whole essay writing thing and researching and everything. If you don’t do that people just sort of go about their own way of doing it. It was good having the structure.

When asked what s/he thought of having to do two summary exercises with different resources, this respondent said:

It was actually reasonably good because often you got quite different perspectives from your two sources and if you’d done one you would probably focus your essay on that one resource and like one point of view or you’d be likely to. So I thought it was kind of good.

Such responses indicate that the structured approach successfully engaged the students in the essay writing process and that they viewed the sequential assessment tasks as helpful in a number of respects.

Our results support Krause’s (2001) conclusions about the challenges presented by the first-year academic writing experience and the demands of acculturation into the academy. Teaching and learning activities that proactively engage students in the academic context enabled our participants to successfully negotiate this experience. Evaluation of the challenge for students in the first-year sociology paper suggests that at both an institutional and research/writing level our participants felt supported in their endeavours by the paper’s embedded assessment. One specific comment from our results relates to Krause’s (2001) identified need for early academic integration of the area of library research: our participant observed that the early placement of the library exercise made her/him become involved in the research process far earlier than s/he would otherwise have done.

One unexpectedly positive result for the teaching staff involved in the research project was that interim feedback from the focus group sessions enabled immediate adjustments to be made to assessment tasks as the course unfolded. From this feedback it was apparent that instructions about

assignments had not initially been as clear as we had hoped. Students indicated a number of aspects of the assessment that might be delivered better. The library tutorial, for example, was conducted by four different library staff who in some cases gave a much less sociologically specific focus to their material. Feedback from the focus group meeting held after this tutorial indicated that the lack of consistency was problematic for some students. As a result of such feedback, the library tutorial in 2005 was conducted by only two library staff, both of whom were academically experienced in sociology. Other more thoroughgoing changes to both the assessment profile and IL embedding therein were implemented in the paper in 2005.

Conclusions

The time taken to explore the literature on both IL and the embedding process was well spent. Awareness of potential problems that might prevent students from successfully acquiring independent learning skills ensured that both library and academic staff involved in the project could move quickly to counter difficulties as they arose. As the project unfolded, parallels between the IL requirements and the academic assessment became both clearer and more complex. Students offered encouraging feedback about the close correlation between academic assessment and the ANZILF and their responses will provide avenues to improve and extend the association between ANZILF skills and sociology-specific assessment. Using a combination of whole-class surveys, focus group surveys and interviews, and individual interviews has enabled us triangulate results. Quantitative data and information gathered from the focus groups suggest that embedding library and IL skills into the assessment was effective and generally well received, strongly supporting the research team's hypothesis that embedding IL skills into the course assessment improved students' IL skill levels.

References

- American Library Association (ALA) (1989). American Library Association presidential commission on information literacy. Final report. Retrieved January 26, 2004, from: <http://www.ala.org/ala/acrl/acrlpubs/whitepapers/presidential.htm>
- Bate, D., & Sharp, P. (1990). *Student writer's handbook*. Sydney: Harcourt Brace Jovanovich.
- Bath, D., Smith, C., Stein, S., & Swann, R. (2004). Beyond mapping and embedding graduate attributes: Bringing together quality assurance and action learning to create a validated and living curriculum. *Higher Education Research & Development*, 23(3), 313-238.
- Biggs, J. (1999). What the student does: Teaching for enhanced learning. *Higher Education Research & Development*, 18(1), 57-75.
- Boyatzis, R. E., Cowen, S., & Kolb, D. (1995). *Innovation in profession education*. San Francisco: Jossey Bass.
- Boykin, A. W. (1994). Harvesting talent and culture: African American children and educational reform. In R. J. Rossi (Ed.), *Schools and students at risk: Context and framework for positive change* (pp. 116-138). New York: Teachers College Press.
- Breivik, P. S. (1998). *Student learning in the information age*. Phoenix: Oryx.
- Bruce, C. (2000). Information literacy research: Dimensions of emerging collective consciousness. *Australian Academic & Research Libraries*, 31(2), 91-109.

- Bruce, C., & Candy, P. (1995). *Developing information literate graduates: Prompts for good practice*. Retrieved December 12, 2005, from: <http://sky.fit.qut.edu.au/~bruce/inflit/prompts.php>
- Bruce, C. S. (2001). Faculty-librarian partnerships in Australian higher education: Critical dimensions. *Reference Services Review*, 29(2), 106-115.
- Bruce, C. S., Chesterton, P., & Grimison, C. (2002). Constituting collective consciousness: Information literacy in university curricula. *The International Journal for Academic Development*, 7(1), 31-40.
- Bundy, A. (1999). Information literacy: The 21st century educational smartcard. *Australian Academic & Research Libraries*, 30(4), 233-250.
- Candy, P. (2002). Information literacy and lifelong learning. White paper prepared for UNESCO, the US National Commission on Libraries and Information Science, and the National Forum on Information Literacy for use at the Information Literacy Meeting of Experts. Prague, Czech Republic.
- Candy, P., Crebert, G., & O'Leary, J. (1994). *Developing lifelong learners through undergraduate education*. Retrieved January 27, 2004, from: http://www.detya.gov.au/nbeet/publications/pdf/94_21.pdf
- Catts, R. (2002, June). *Issues in the interpretation of the Australian Information Literacy Standards*. Paper presented at the 2nd International Lifelong Learning Conference, Building learning communities through education, 16-19 June. Yeppoon, Queensland, Australia.
- Clanchy, J., & Ballard, B. (1995). Generic skills in the context of higher education. *Higher Education Research & Development*, 14, 155-166.
- De Jager, K., & Nassimbeni, M. (2002). Institutionalizing information literacy in tertiary education: Lessons learned from South African programs. *Library Trends*, 51(2), 167-184.
- Diamond, R. (1998). *Designing and assessing courses and curricula*. San Francisco: Jossey Bass.
- Down, C., Martin, E., & Hager, P. (1999, July). *Graduate attributes, key competence and judgments: Exploring the links*. Paper presented at the Higher Education Research & Development Society of Australasia (HERDSA) Annual International Conference, Cornerstones. What do we value in higher education?, 12-15 July, Melbourne, Australia.
- Drury, H., & Taylor, C. (1999, July). *Providing the discipline context for skills development: Report on the production on an interactive video for oral and visual communication in the biological sciences*. Paper presented at the Higher Education Research & Development Society of Australasia (HERDSA) Annual International Conference, Cornerstones. What do we value in higher education?, 12-15 July, Melbourne, Australia.
- Ellis, C., & Percy, A. (2000). Building online essay writing support tools. In L. Richardson & J. Lidstone (Eds.), *Proceedings of ASET-HERDSA Conference, Flexible learning for a flexible society* (pp. 239-250). Toowoomba: Australian Society for Educational Technology and Higher Education Research & Development.
- Gibbs, G. (1997). *Improving the quality of student learning*. Bristol: Technical and Educational Services.

- Golding, B., Marginson, S., & Pascoe, R. (1996). *Changing context, moving skills: Generic skills in the context of credit transfer and the recognition of prior learning*. Canberra: Australian Government Publishing Service.
- Grassian, E., & Kaplowitz, J. (2001). *Information literacy instruction: Theory and practice*. New York: Neal-Schuman.
- Hart, G., McCarthy, J., & Peacock, J. (2003). Double strength, maximum gain: Optimising student learning via collaborative partnerships at QUT. *Library Review*, 52(8/9), 433-437.
- Hattie, J., Biggs, J., & Purdie, N. (1996). Effects on learning skills interventions on student learning: A meta-analysis. *Review of Educational Research*, 66(2), 99-136.
- Hine, A., Gollin, S., Ozols, A., Hill, F., & Scoufis, M. (2002). Embedding information literacy in a university subject through collaborative partnerships. *Psychology Learning and Teaching*, 2(2), 102-107.
- Jenkins, A., Jones, L., & Ward, A. (2001). The long-term effect of a degree on graduate lives. *Studies in Higher Education*, 26(2), 147-161.
- Johnston, B., & Webber, S. (2003). Information literacy in higher education: A review and case study. *Studies in Higher Education*, 28(3), 335-352.
- Kemp, I. J., & Seagraves, L. (1995). Transferable skills - can higher education deliver? *Studies in Higher Education*, 20(3), 315-328.
- Krause, K. (1998, July). *Writing assignments in the first year: Student perceptions and strategies for survival*. Paper presented at the Third Pacific Rim Conference, First Year in Higher Education - Strategies for success in transition years, 5-8 July, Auckland, New Zealand.
- Krause, K. (2001). The university essay writing experience: A pathway for academic integration during transition. *Higher Education Research & Development*, 20(2), 147-168.
- Krause, K., & Duchesne, S. (2000, July). *With a little help from my friends: Social interactions on campus and their role in the first year experience*. Paper presented at the Fourth Pacific Rim Conference, First year in higher education, 5-7 July, Brisbane, Australia.
- Kuh, G. D., & Gonyea, R. M. (2003). The role of the academic library in promoting student engagement in learning. *College & Research Libraries*, 64(4), 256-282.
- Kuh, G. D., & Vesper, N. (1997). A comparison of student experiences with good practices in undergraduate education between 1990 and 1994. *The Review of Higher Education*, 21(1), 43-61.
- Lea, M., & Street, B. (1998). Student writing in higher education: An academic literacies approach. *Studies in Higher Education*, 23(2), 157-172.
- Leader, G. (2003). Lifelong learning: Policy and practice in further education. *Education and Training*, 45(7), 361-370.
- Levin, E., & Tempone, I. (2002). Providing guidelines for first-year assessment tasks as a means of developing core graduate attributes: Nurturing or spoonfeeding? In *Proceedings of the Second International Lifelong Learning Conference, Building learning communities through education*. Rockhampton, Australia: Central Queensland University Press.

- Levin, M., & Levin, J. (1991). A critical examination of academic retention programs for at-risk minority college students. *Journal of College Student Development*, 32(4), 323-334.
- Linhart, R. (2002). Attempts to advocate information literacy as a conceptual and process-oriented continuum of skills into system-wide outcomes. In *Proceedings of the Second International Lifelong Learning Conference, Building learning communities through education*, Rockhampton, Australia: Central Queensland University Press.
- Lupton, M. (2003, July). *Assessment and curriculum alignment*. Paper presented at the Australian and New Zealand Institute for Information Literacy (ANZIIL) Symposium Series One, 7-8 July.
- Marcum, J. W. (2002). Rethinking information literacy. *Library Quarterly*, 72(1), 1-26.
- Meldrum, A., & Tootell, H. (2004). Integrating information literacy into curriculum assessment practice: An informatics case study. *Journal of University Teaching and Learning Practice*, 1(2), 49-58.
- Misko, J. (1995). *Transfer: Using learning in new contexts*. Adelaide: National Centre for Vocational and Education Research.
- Nagda, B. A., Gregerman, S. R., Jonides, J., Von Hippel, W., & Lerner, J. S. (1998). Undergraduate student-faculty research partnerships affect student retention. *The Review of Higher Education*, 22(1), 55-72.
- Nightingale, P., Te Wiata, I., Toohey, S., Ryan, G., Hughes, C., & Magin, D. (1996). *Assessing learning in universities*. Sydney: University of New South Wales Press.
- Nulty, D. D. (2003, December). *Assessing student learning: Particularly information literacy and other generic skills*. Paper presented at the Australian and New Zealand Institute for Information Literacy Symposium Series Two, 4-5 December, Hamilton, New Zealand.
- Oliver, R. (1998). Partnerships in teaching and learning: An emerging role for technology. In C. McBeath & R. Atkinson (Eds.), *Proceedings of EdTech '98, Planning for Progress, Partnerships & Profit*. Perth: Australian Society for Educational Technology. Available at: <http://www.aset.org.au/confs/edtech98/pubs/articles.oliver.html>
- Rader, H. B. (2002). Information literacy 1973-2002: A selected literature review. *Library Trends*, 51(2), 242-259.
- Radloff, A., & de la Harpe, B. (2001). Helping students develop their writing skills - a resource for lecturers. In L. Richardson & J. Lidstone (Eds.), *Proceedings of the ASET-HERDSA (Australian Society for Educational Technology & Higher Education Research & Development Society of Australasia) 2000 Joint International Conference, Flexible learning for a flexible society* (pp. 566-573). Toowoomba: ASET & HERDSA.
- Ragains, P. (2001). Infusing information literacy into the core curriculum: A pilot project at the University of Nevada, Reno. *portal: Libraries and the Academy*, 1(4), 391-407.
- Ramsden, S. (1992). *Learning to teach in higher education*. New York: Routledge.
- Rockman, I. F. (2002). Strengthening connections between information literacy, general education, and assessment efforts. *Library Trends*, 51(2), 185-198.

- Sadlo, G., & Richardson, J. T. E. (2003). Approaches to studying and perceptions of the academic environment in students following problem-based and subject-based curricula. *Higher Education Research & Development*, 23(3), 254-274.
- Spinks, S. (2000, July). *The craft of academic writing and the first year experience: The importance of marker to student communication*. Paper presented at the Fourth Pacific Rim First Year in Higher Education Conference, Creating futures for a new millennium, 5-7 July, Brisbane, Australia.
- Thompson, G. B. (2002). Information literacy accreditation mandates: What they mean for faculty and librarians. *Library Trends*, 51(2), 218-241.
- Todd, R. (1996). Independent learning and information literacy: An essential partnership for learning. In E. Nimon (Ed.), *Learning resourcefully: challenges for teacher librarians in the information age* (pp. 3-18). Adelaide: Auslib Press.
- University of Otago (2002). *The Teaching and Learning Plan*. Dunedin: University of Otago.
- Vardi, I. (2000, July). *What lecturers want: An investigation of lecturers' expectations in first year essay writing tasks*. Paper presented at The Fourth Pacific Rim First Year in Higher Education Conference, Creating futures for a new millennium, 5-7 July, Brisbane, Australia.
- Wallace, M. C., Shorten, A., Crookes, P. A., McGurk, C., & Brewer, C. (1999). Integrating information literacies into an undergraduate nursing programme. *Nurse Education Today*, 19(2), 136-141.
- Young, N. J., & Seggern, M. V. (2001). General information seeking in changing times: a focus group study. *Reference and User Services Quarterly*, 41(2), 159-169.