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Post-graduate health promotion students assess their information literacy

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Abstract

Purpose - The purpose of this paper is to examine post-graduate health promotion students' self-perceptions of information literacy skills prior to, and after completing PILOT, an online information literacy tutorial.

Design/methodology/approach – Post graduate students at Queensland University of Technology enrolled in PUP038 New Developments in Health Promotion completed a pre- and post- self-assessment questionnaire. From 2008-2011 students were required to rate their academic writing and research skills before and after completing the PILOT online information literacy tutorial. Quantitative trends and qualitative themes were analysed to establish students' self-assessment and the effectiveness of the PILOT tutorial.

Findings – The results from four years of post-graduate students' self-assessment questionnaires provide evidence of perceived improvements in information literacy skills after completing PILOT. Some students continued to have trouble with locating quality information and analysis as well as issues surrounding referencing and plagiarism. Feedback was generally positive and students' responses indicated they found the tutorial highly beneficial in improving their research skills.

Originality/value - This paper is original because it describes post-graduate health promotion students' self-assessment of information literacy skills over a period of four years. The literature is limited in the health promotion domain and self-assessment of post-graduate students' information literacy skills.

Keywords – Self-assessment, Post-graduate, Information literacy, Library instruction, Higher education, Health promotion, Evidence-based practice

Paper Type - Research paper

Introduction

Post-graduate health promotion students enter their courses from a wide range of backgrounds, some already having established a sense of professional practice (Cronin and Connolly, 2007). While some students exhibit confidence in their information literacy abilities, Blignaut and Els (2010) suggest many students are underprepared for the demands of post-graduate study. Graduate-level health science programs, including health promotion, often incorporate evidence-based practice modules, which focus on the same skills (question formulation, search skills and critical analysis of literature), as those taught in information literacy modules (Hill *et al.*, 2010). Even with such an increasing focus on these skills, many students often bypass libraries when conducting research and rely on internet search engines such as Google (Ivanitskaya *et al.*, 2004). Pomerantz *et al.*, (2010) recommends that librarians, literacy teacher and public health workers can collaboratively promote health literacy, as there is increasing need for people to have the skills to access and evaluate health information. Similarly, Hill *et al.*, (2010) suggest that an increasing number of librarians are developing and teaching modules for evidence-based practice. Bundy (2004) suggests the incorporation of information literacy programs across a range of subjects requires a collaborative effort between educators. While it is important to investigate effective information literacy instruction methods, it is equally important to assess whether these methods are effective, as Oakleaf (2009) suggests, higher education institutions are increasingly focussed on assessing student learning. This paper discusses an assessment item focused on information literacy skills in the post-graduate health promotion curriculum.

Literature Review

A review of the literature reveals numerous articles which discuss the relevance of information literacy skills in higher education. Although articles which discuss information literacy in a post-graduate context are scarce, there are fewer still which discuss the field of health promotion education. Many articles, as suggested by Lloyd (2003), indicate an increasing interest in information literacy within the academic library context. Much of the literature is concerned with the development of information literacy skills and attributes; the most effective methods of assessing students' information literacy; and the connection between information literacy and lifelong learning (Candy *et al.*, 1994). The evolving role of

the librarian is also explored as faculty/librarian collaboration is recognised as an effective means of teaching information literacy (Clark and Catts, 2007).

Evidence-based practice and health promotion

In the past decade there has been a growing emphasis on evidence-based practice in the health sector, including health promotion (Rychetnik, 2003). Health promotion educators are responsible not only for providing students with an academic education, but also preparing them a complex area of work (Cronin and Connolly, 2007). Hill *et al.*, (2010) suggests that a growing focus on evidence-based practice in academic institutions has been driven by the efforts of Australia, Canada, New Zealand and England who have provided leadership in health education and promotion programs and resources. In health promotion, policy makers and practitioners make evidence-based decisions after examining available information on interventions which have previously been shown to work or not work, and such an approach requires rigorous evaluation and dissemination of findings (Rychetnik, 2003). In 2001, the United States created a National Task Force on Accreditation in Health Education, recognising the processes of synthesis, analysis and evaluation as essential in graduate-level health education degrees (Hill *et al.*, 2010).

Expected learning outcomes and competencies

The characteristics of the information literate person have been described in standards set out by the Australian and New Zealand Institute for Information Literacy (Bundy, 2004); the American Library Association (2000); and the United Nations Educational, Scientific, and Cultural Organisation (UNESCO) international framework (Catts and Lau, 2008). According to Bundy (2004), the information literate person knows when and to what extent information is needed, how to locate it, and how to evaluate the information and its sources critically. These characteristics are also required of the health promotion graduate. Some of the recognised competencies of students completing a Master of Public Health (MPH) program with a focus on health promotion include; analysis of information regarding the health of specific communities, analysis and prioritisation of health problems, analysis and comparison of relevant theories and models, and critical appraisal of potential evidence-based health promotion activities (Genat *et al.*, 2009). Arndt (2009) suggests future health professionals

should be equipped with the skills to efficiently access up-to-date information, and recommends information literacy be integrated into the nursing curriculum.

Information literacy instruction

There is much literature on information literacy instruction methods. Johnston (2010) suggests online instruction in higher education is effective due to an increase in online teaching and learning. Weisskirch and Silveria (2005) cite a growing trend in faculty/librarian collaboration in teaching students information literacy skills, while Ritchie *et al.*, (2010) suggest that as well as providing traditional reference services, they are managing electronic information systems, and engaging with other specialists through liaison initiatives. Clark and Catts (2007) suggest this is an effective way to ensure information literacy instruction is integrated into the course curriculum rather than being taught as a stand-alone educational session. Beile and Boote (2004) discuss the effectiveness of online versus face-to-face tutorials, while Johnston (2010) highlights the benefits of subject specific, rather than generic library skills training. While there has been much support for web-based instruction, Lindsay *et al.*, (2006) compare effectiveness and useability of a number of online information literacy tutorials, and reinforce the importance of careful design and structure.

Standardised survey instruments versus self-assessment

It is important to measure the outcomes of information literacy instruction to determine if and what students are actually learning. For example, Catts and Lau (2008) discuss the popularity of standardised surveys as indicators of information literacy in higher education. In Australia, the Council of Australian University Librarians Information Skills Survey (CAUL ISS) (Council of Australian University Librarians, 2009) was developed as a self-report questionnaire based on indicators from the Australian and New Zealand Information Literacy Framework (Bundy, 2004). In the United States, the Standardised Assessment of Information Literacy Skills (SAILS) was developed, based on the Association of College and Research Libraries (ACRL) Information Literacy Competency Standards for Higher Education (American Library Association, 2000). The Educational Testing Service (ETS) have created a simulated computer-based test known as iSkills (Educational Testing Service, 2012). Catts and Lau (2008) recommend such a test in the higher education environment, and in its absence, propose the self-report method can be a reliable indicator of skill level. Contrary to

this, Abdullah (2010) suggests evidence-based data provides more concrete evidence of student capabilities than perception-based. This view is shared by Dunaway and Orblych (2011) who promote the benefits of formative assessment as assessment-based evidence. Similarly, *assessment for learning* theory, suggests assessment and learning go hand-in-hand and reinforces learning material (Willis, 2007; Dunaway and Orblych, 2011; Oakleaf, 2009).

The usefulness of self-assessment tools designed to measure information literacy has been widely debated. Ivanitskaya *et al.*, (2004) developed an online Research Readiness Self-Assessment (RRSA) tool to assess students' perceptions of information literacy skills and if these reflect actual skill level. This tool used three forms of assessment to help students become aware of lack of skills and motivate them to seek assistance in those areas (Ivanitskaya *et al.*, 2004). This self-motivation is echoed by Shenton and Fitzgibbons (2010) who claim that without self-motivation from the learner, the opportunity to acquire lifelong learning skills may be limited because of the degree to which information literacy can be applied. Langendyk (2006) evaluated the accuracy of self-assessment in relation to academic performance of third-year medical students, concluding students are often inaccurate when assessing their skill level. Low achieving students are over generous when assessing themselves and their peers, whereas high-achieving students tend to be more accurate or to under-assess their skills (Langendyk, 2006).

Background

New Developments in Health Promotion (PUP038) is a post-graduate unit offered by the School of Public Health at the Queensland University of Technology (QUT). PUP038 was designed as a foundational unit in a suite of health promotion units. In 2008 the course was re-evaluated to include a focus on improving students' information literacy skills. Many students are either returning to study after a period of time, or are international students who have not previously studied at QUT. Recognising the importance of these skills in a health promotion setting, the unit co-ordinator and liaison librarian decided it was important to help students improve research skills early in the semester. An information literacy skills tutorial was then incorporated into the first assessment item.

Three modules form the basis of the unit, including 1) The history and future of health promotion, 2) Approaches to health promotion, and 3) Evidence, ethics and the scope of

practice for health promotion. Internal students are expected to participate in a weekly combined lecture/tutorial session, and external students receive a CD-ROM study package to study at their own pace. QUT Blackboard®, an online teaching and learning site, as well as a Course Materials Database (CMD) provide students with access to materials to support learning. The unit consists of three assessment items, the first, a formative, skills-based assessment item designed to improve students' information literacy skills. This assessment item is based on the PILOT online tutorial, and includes three parts. Part one, the Information Literacy Skills Self-assessment Questionnaire 1 (ILSaQ1); part two, the PILOT tutorial; and part three, Information Literacy Skills Self-assessment Questionnaire 2 (ILSaQ2). ILSaQ1 and ILSaQ2 contain identical questions. The PILOT tutorial is self-paced and made up of six modules. It was designed in collaboration with the liaison librarian and is based on core information literacy concepts. See Appendix 1 for a screen shot of PILOT (Queensland University of Technology, 2010). Students were required to complete a quiz in order to translate the generic concepts to subject specific. Feedback was provided for each question and linked back to the specific point in Pilot relating to that question.

The ILSaQ1 and ILSaQ2 originally contained nine questions asking the student to rate their skills as: *not well*, *OK*, or *very well*, in relation to the preparation of a written piece of work. This was followed by two questions asking the student to describe, 1) the areas in relation to the seven questions, needing further improvement, and 2) plans for further improvement of these skills. Following a review of the first assessment item from 2008, the unit co-ordinator, in collaboration with the liaison librarian altered the assessment. The weighting of the assessment item was reduced from 30 to 20 per cent, two questions were removed from the pre- and post-questionnaires, the number of questions in the PILOT quiz were increased from 15 to 20 and the pass rate from 75 to 80 per cent. See Appendix 2 for the revised self-assessment questionnaire.

Methodology and Findings

A mixed method approach was taken in analysing the data from 2008 to 2011. The quantitative data was analysed from the results of the pre- and post-questionnaires. These were collated in an excel spreadsheet and counts were taken for each question to determine the number of students who assessed their skills in one of three categories: not well, OK, and very well. For each year, the proportion of total students in each of the categories calculated

for both pre- and post-questionnaires, gives an indication of the how many students remain in the same category or changed categories after having completed the PILOT quiz. The counts from each of the four years were combined into pre- and post-questionnaire totals, and percentages calculated for each category to gain an overall picture of whether students felt their skills had improved.

The qualitative data from question one on the pre- questionnaire was coded for all four years to ensure anonymity. Students' responses were sorted into information literacy competencies addressed in the PILOT tutorial. The competencies include: identifying main concepts, identifying information sources, search strategies, information retrieval and evaluation, plagiarism and referencing. Question two was not included for evaluation because it does not add anything to the study. The data was analysed to gain further insight into the students' self-perceptions. This process was repeated for the post-questionnaire to understand changes in perceptions and build on the results from the quantitative data. The aim of this research is to gain insight into students' perceptions of their information literacy skills. The authors acknowledge that the results would have been strengthened by the use of a standardised assessment tool. By comparing students' self-assessment with objective data-based results, this would have provided more robust data, however this was not available for all years and therefore would not have added to the study.

Year One – 2008

A total of 30 students were enrolled in PUP038 in semester one of 2008. On completion of assessment item one, 25 students had completed all three tasks. Questions five and seven from ILSaQ1 have not been included in this analysis as these questions were removed in the subsequent years. For the seven questions, students who recorded 'not well' decreased 32 to 8 (14 %) from pre- to post-questionnaire. Students responding with 'OK' decreased from 110 to 94 (9 %), and those who recorded 'very well' increased from 33 to 73 (23 %) from pre- to post-questionnaire. The questions which resulted in the most the most significant increases were question four, relating to the use of databases to retrieve information, with 16 students (64 %) improving at least one category. Question two, relating to the identification of information sources, saw 12 students (48 %) improve by at least one category.

Year Two – 2009

In 2009, 22 students were enrolled and 18 completed the requirements for assessment item one. Of the 18 students, from pre- to post-questionnaire, there was a decrease from 11 to 3 (6 %) in the number of students recording 'not well' and 66 to 47 (15 %) recording 'OK'. The 'very well' category received an increase of 49 to 76 (21 %) students. Question three, indicating ability to create a search strategy to find information, as well as question four, both received the most significant improvements of 9 (50 %) and 10 (55 %) students respectively.

Year Three – 2010

Initially, 26 students were enrolled in PUP038 in 2010 however only 18 completed the assessment one requirements. A decrease from 12 to 4 (6 %) students was recorded between the two questionnaires in the 'not well' category, and 21 per cent fewer students recorded an 'OK', decreasing from 60 to 34. The 'very well' category had an increase of 54 to 88 (27 %) students. In this year, question five, which asked how well students were able to evaluate the relevance of their information, indicated half of the students improved at least one category. Question one, relating to how well students can define their topic, as well as question four, both recorded an increase of 8 (44 %) students improving at least one category.

Year Four – 2011

2011 had the least number of students enrolled, with 18 at the beginning and 17 available for analysis. From pre- to post-questionnaire, the 'not well' categories had fewer responses with 16 to 3 (11 per cent) students. The 'OK' category initially had 68 students, decreasing to 53 (14 per cent) after the second questionnaire. The number of students who recorded a response in the 'very well' category increased from 35 to 63 (24 per cent) students. Question four had a little over half (9) of the students improve at least one category, while question five saw 7 (41 per cent) students improve by at least one category.

After the data was analysed for each of the four years separately, the answers to all seven questions in each category were compiled for the total (n=78) number of students (see figure 1.). The changes were recorded as a percentage from pre- to post-questionnaire. The total number of students recording 'not well' decreased from 71 to 18 (10 per cent). Those

students recording ‘OK’ also decreased, from 56 to 42 (14 per cent), and an increase of 171 to 300 (29 per cent) students occurred in the ‘very well’ category from the first to second questionnaire.

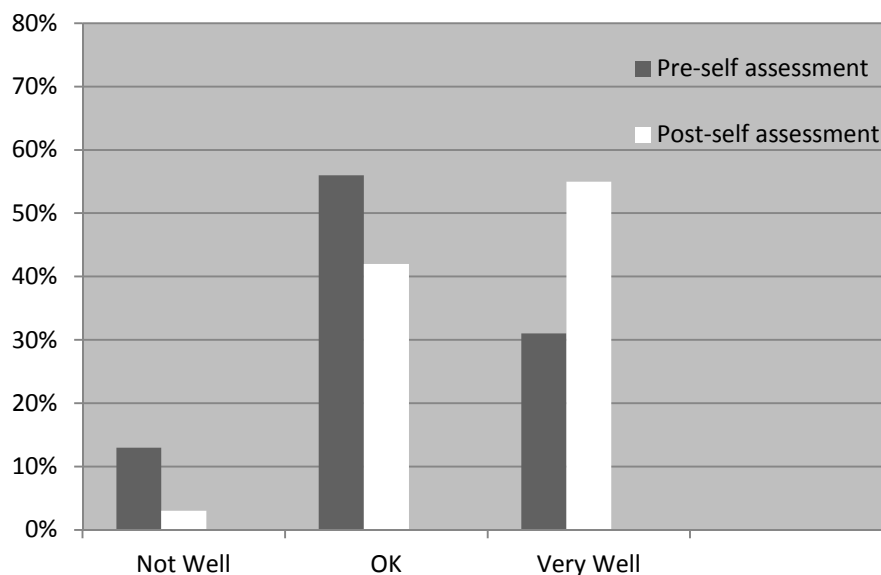


Figure 1. Total response rate from pre- to post-self assessment for 2008-2011

The students’ written responses from ILSaQ1 were based on the information literacy competencies addressed in the PILOT tutorial, and identified the areas which needed improvement. Responses indicate a general lack of confidence with most information literacy skills. When preparing a university assignment, most students indicate they are unable to clearly define the assignment topic by identifying the main concepts. This leads to difficulties with creating an appropriate search strategy. The retrieval of information from databases and texts is also identified as challenging for a large number of students. One student from the 2008 cohort indicated that:

“I think I need further improvement on using e-databases to retrieve relevant information in order to increase the search findings, rather than using internet search engine eg. Google.”
(IL1081)

These findings also indicate difficulties with the evaluation of information as well as referencing. In 2010 a student identified both of these as issues by saying:

“...I would like to improve my skills using information including evaluating the relevance...Be familiar with the correct referencing style...” (IL110f)

Qualitative data from ILSa2 was analysed separately. The same two questions were asked and students identified the areas which they improved most significantly. These were defining the topic, and being able to identify the main concepts. After completing the second questionnaire, students also indicated they no longer struggled with creating a search strategy. In 2008, one student identified the areas in which they had improved:

“When preparing Assignment 2: Module activities, I believe I improved most profoundly in using texts and e-databases. I found the article search engine on the QUT library website particularly useful and found some excellent materials that I believe improved the overall quality of my assignment.” (IL208u)

After the first assessment item, students continued to struggle with identifying and retrieving information. Evaluating of the relevance of information was identified as a problem for many students. Referencing and plagiarism also continued to trouble students. Many indicated they were from non-English speaking backgrounds and identified this as a barrier to achieving the information literacy skills identified in the questionnaires. Students commented on the value of PILOT, with many indicating a perceived improvement in information literacy skills. One student in 2008 stated:

“Pilot opened my mind up to more opportunities in accessing information, which I believe is invaluable.” (IL208a)

Another student in 2010 commented on the value of receiving information literacy instruction in the initial stages of post-graduate study:

“The PILOT tutorials were fantastic at improving my research skills and I am grateful to have had this assessment in the subject at the beginning of post grad study.” (IL210f)

Discussion

This research provides evidence of post-graduate health promotion students' self-perceptions of their information literacy skills. The findings support a number of conclusions drawn from previous information literacy research in higher education. Faculty/librarian collaboration has been recommended in providing course-integrated, online information literacy instruction which can improve students' perceptions of their research skills. The following findings can be applied in a post-graduate, health promotion context: students perceive their information literacy skills to be fairly low at the onset of post-graduate study; students perceive marked improvements in their skills after completing an online information literacy tutorial; and self-assessment encourages students to consider their strengths and weaknesses and provides motivation to improve. The following section will discuss these findings further.

In 2008 the PUP038 unit co-ordinator and liaison librarian decided the first assignment should be dedicated to assessing the students' information literacy skills. Although evidence-based practice is not a part of this unit, it is recognised that information literacy skills are essential for researching the literature to inform evidence-based decisions in health promotion (Hill *et al.*, 2010). The unit co-ordinator felt many students exhibited difficulties with basic information literacy skills such as searching databases and locating quality information sources. While information literacy has been described by Candy *et al.*, (1994) as an important graduate attribute for lifelong learning, Blignaut and Els (2010) suggest many students entering higher education display poor computer and information literacy skills. In a collaborative effort, the assignment was designed to assess the students' perceptions of their information literacy skills in the form of a self-assessment questionnaire, followed by the completion of the online PILOT tutorial. Perceptions were then re-assessed by completing the same questionnaire and noting any improvements.

The collaborative effort between the unit coordinator and the liaison librarian, in incorporating information literacy instruction and assessment into the curriculum, has increased the students' awareness of these skills as well as contributing to perceived improvements in their abilities. Hill *et al.*, (2010) suggest that opportunities exist in evidence-based health promotion and education, for instructors and librarians to expand online evidence-based health resources.

The reliability of self-assessment has been widely debated (see Blignaut and Els, 2010; Gross and Latham, 2009; Ivanitskaya *et al.*, 2004 and Langendyk, 2006). Adetoro *et al.*, (2010) and Kurbanoglu *et al.*, (2006) suggest high self-efficacy perception for information literacy is essential for lifelong learning and is best measured by the use of a self-report scale. It is beyond the scope of this paper to discuss self-efficacy, but it is interesting to note the findings of Beile and Boote (2004), who suggest that library instruction has a positive effect on both self-efficacy levels and learning outcomes. Although self-report alone may not a reliable assessment tool for information literacy, the work of Beile and Boote (2004), Kurbanoglu *et al.*, (2006), and others, suggests that when used in conjunction with instruction methods, such as the PILOT tutorial, self-assessment has the potential to enhance the learners experience, provide an opportunity to reflect on strengths and weaknesses and identify areas in which skills may be improved (Ivanitskaya *et al.*, 2004).

In a similar study by Weisskirsh and Silveria (2005), students were asked to self-report their library search skills using a 5-point Likert scale, prior to attending a library skills workshop, after the workshop, and again at the end of the semester. In line with the findings from the present research, students reported improvements in their search skills from Time 1 to Time 2 (Weisskirsh and Silveria, 2005). Similarly, Hufford (2010) reports on the experience of implementing a pre- and post- survey to measure student learning outcomes. Survey questions were based around the ACRL Information Literacy Competency Standards for Higher Education and an increase was achieved from pre- to post-assessment. Hufford (2010) recommends librarians share with colleagues and others, what they learn, to improve teaching and assessment techniques and student learning experiences. In response to this, the aim of this paper is to contribute new findings to the growing body of literature on information literacy skills assessment. While much has been done in this area, few studies have examined the skills of post-graduate students returning to study after a period of time in the workforce. Few studies have also made the link between information literacy and the growing use of evidence-based practice in the health sector. This is particularly significant given that in the field of health promotion, these skills are necessary when accessing current literature to inform new intervention and programs. The data collected over the four years has been highly useful to the course co-ordinator and liaison librarian in giving support to the effectiveness of pre- and post-self assessment combined with the completion of the PILOT online information literacy tutorial.

A wide range of learning opportunities are now available throughout universities, and online delivery provides convenient access to learning materials. Many students prefer this method of learning, and online information literacy instruction has been regarded as an effective way to help students learn these skills (Johnston, 2010). Many of the students enrolled in PUP038 are international and/or mature-aged. Dearnley *et al.*, (2006) and Maina and Shaffer (2006) suggest some of the biggest challenges for non-traditional students in accessing online materials, relate to library anxiety, computer skill deficits and a lack of opportunity to self-assess learning needs. It is not the intent of the authors to provide evidence of improvements in PUP038 students' information literacy skills, but the qualitative data does indicate students have increased confidence in their abilities, and are motivated to improve in areas which need attention.

From the results gathered over four years, the following recommendations can be made: 1) pre- and post-questionnaires can help educators understand how post-graduate health promotion students perceive their information literacy skills, and inform development of future learning activities and assessment; 2) health promotion students can benefit from a targeted information literacy exercise which is implemented at the beginning of post-graduate study to lay the foundations for effective evidence-based research skills; and 3) health promotion academic staff should continue to assess student learning to evaluate the effectiveness of information literacy skills instruction in post-graduate study. The areas of information retrieval and analysis as well as plagiarism and referencing continued to trouble students after completing the online tutorial. It is recommended more focus be placed on these areas through more opportunities for practical application within the course curriculum. The authors make the following recommendations for future research: a) analysis of data-based assessment results would provide more robust evidence of student learning outcomes, b) re-assessment of information literacy towards the end of post-graduate study would provide further evidence of acquisition of skills, and c) assessment of post-graduate students' information literacy skills in other areas within the public health domain.

Conclusion

The inclusion of an assessment item focussed on information literacy principles in a post-graduate health promotion unit, proved to be effective in improving students' perceptions of their skills. Not only is information literacy an expected attribute of the university graduate,

but it is a necessary skill for those wishing to pursue a career in health promotion. The pre-questionnaire provided the unit co-ordinator, as well as the students themselves, with a greater understanding of their perceived information literacy strengths and weaknesses. By completing the PILOT online tutorial, the students were given the opportunity to refine their research skills as well as learn new skills and techniques. The post-questionnaire then allowed the students to reassess how accurate their initial perceptions of their skills were. This also provided staff with an opportunity to evaluate the effectiveness of the PILOT tutorial.

The literature indicates that in academic institutions, more emphasis is being placed on faculty/librarian collaboration. It is therefore beneficial for librarians to share what they are learning in an attempt to respond to evolving nature of this role. The students' self-assessments, as well as their detailed comments, revealed that prior to completing the online tutorial, they were only moderately confident in their information literacy skills. The post-questionnaire showed marked improvements in their perceptions of their skills and positive attitudes towards the value of having completed the PILOT tutorial. It is recommended that health promotion students undertaking post-graduate study would benefit from an assessment item based on information literacy skills early in their course. Students who are academically prepared can apply evidence-based practice to a wide range of health settings, including health promotion, and those wishing to complete a Master of Public Health program will have a solid foundation on which to build their skills. If students are given the opportunity to self-assess and continue to apply information literacy skills, they will be better equipped to become lifelong learners.

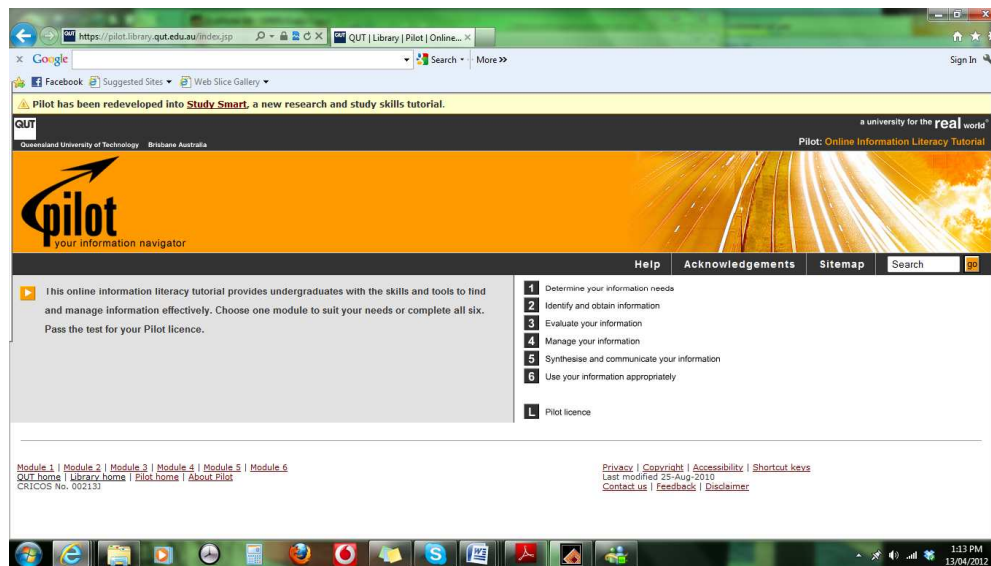
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Appendix 1. Screen shot of the PILOT online information literacy tutorial



Appendix 2. Information Literacy Skills Self-assessment Questionnaire

PUP038 New Developments in Health Promotion

Information literacy Skills Self-assessment Questionnaire 1

You must complete and submit this section **before** you complete *PILOT*. Keep a copy of this document for later reference.

The development of information literacy skills is an essential component of professional practice in all disciplines. The following questions are designed to facilitate your reflection on this area of your academic development. Take the time to think about each question and the 'evidence' for your decisions about how well you met the criteria.

The *Information literacy Skills Self-assessment Questionnaire 1* will 'benchmark' your current performance.

In preparing a piece of written work, how well do you think you can do each of the following:

	Not well?	OK?	Very well?
Define the topic for your assignment by identifying the main concepts?			
Identify and prioritise the types of information sources you need for your topic?			
Create a search strategy using the main concepts to find information on your topic?			
Use texts & databases (<i>ProQuest, ScienceDirect etc.</i>) to retrieve information for your topic?			
Evaluate the relevance of information which you have collected for addressing your topic?			
Understand issues related to plagiarism, copyright, fair dealing and security of information?			
Understand the referencing requirements for the information sources which you will use?			

In light of your responses to these questions, what area/s need/s further improvement?

What are your plans for further improvement in the development of your information literacy skills?