

Integrating Information Literacy into Course Design and Delivery – Engineering students learn about information search and management as a part of professional engineering skills at Queen's University

Opportunity

The teaching of information literacy through the Engineering and Science Library in the Faculty of Engineering and Applied Science at Queen's University in Kingston has been changing over the last few years. Originally an overview of library print and electronic resources was offered as a short lecture and demonstration; then the learning was expanded to a hands-on workshop on information management. To make the information more meaningful and immediately applicable, the students were asked to think about their assigned projects before attending so that what they learned about information sources could be applied directly to their project needs.

With the introduction of Moodle as the learning management system (LMS), the role of the library and the teaching in information literacy became integrated directly into a compulsory first-year course. The learning of essential information skills is now a part of the formal learning requirements.

Innovation

Twelve attributes have been outlined as necessary for all graduates of an Engineering program by the Canadian Engineering Accreditation Board and the role of the library has been clearly established in supporting many of these attributes particularly design, communication, and lifelong learning. Teaching and learning about information search and management was agreed upon as a core to the acquisition of these attributes.


Given the large size of the first-year Engineering class and the importance of the skills to be acquired, Nasser Saleh, the Integrated Learning Librarian, developed online modules in 2010-11 to transmit the information, practice, and application that students need in information search and management. The modules are embedded into the project-based course on Professional Engineering Skills; demonstrating mastery of information management learning outcomes is integral to course assignments and the final grade. Nasser Saleh works as part of the curriculum design team for the course.

Each of the weekly modules has goals, lecture slides, examples, and links. Topics include development of a concept map, how to define what information is needed, how to do information searches, criteria for the evaluation of sources, examples of the information sources that students are most likely to use and also citation management software. To link these modules to the course content, the students have to submit a concept map and both individual and group lists of evaluated and annotated information sources related to the topic of their project. At the end of the term, the learning from the online workshops has to be applied in the final project.

The students can post questions to the forum on Information Search and Management in Moodle and the responses are available for all students.

Information Search and Management (103): Information Search and Evaluation

Introduction



This module will take approximately 30 minutes to complete.

By the end of this module, you will be able to:

- in stage 2: search for the information sources where you can obtain these types of information
- in stage 3: revise your search strategy, assess your search results for quantity, quality and relevance
- in stage 4: manage and use information properly in IEEE citation style.

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In the second year of Engineering, students move into specialties such as civil, electrical, etc. New modules with more advanced information have been developed that reflect the needs of the different engineering branches – and build on what was learned in the first year Information Search and Management modules through new online modules that describe more advanced techniques of information search and example of subject specific resources.

Outcomes and Benefits

The modules provide just-in-time learning that can be (and is) used and re-used as the content related directly to the academic context of the students. The skills can be transferred into any course and to professional situations after the students graduate.

By looking at the final reports submitted by the students who have completed the modules, their applicability and usefulness can be assessed and modifications made. The students have also been asked about the modules at an exit survey last years and have described them as useful learning resources.

The LMS reports on how often resources within it are used – and shows over 5,000 uses for the modules, including patterns of re-use.

Challenges and Enhancements

Building something new in an existing culture is a slow process and relationships with professors are critical to bringing additional content and assignments into courses.

Potential

In March 2011, the library system at Queen's created specialist areas of professional practice for the whole system – and Nasser Saleh became the e-learning specialist. He works with his colleagues to support and extend how the library resources are integrated into the learning management system. He is also working to create a community of practice around e-learning among the librarians as a way of improving what they do, rather than adding additional work. Informal sessions to discuss common interests and demonstrations of technologies are targeted at creating an environment to think about change.

In addition, the modules that he created for use in Engineering can be used as a framework by colleagues in other faculties to create subject-specific modules that can be integrated into courses and offered to students for independent learning.

Nasser Saleh would welcome the opportunity to share models and ideas with colleagues who are looking at new ways that libraries can use technology to enhance learning in their institutions.

For Further Information

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