MOVING SERVICES OUT OF THE LIBRARY AND INTO THE CLASSROOM

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Over the past ten years there have been dramatic changes in the information resources available to the undergraduates in the engineering program at the University of Western Ontario (UWO). In parallel with these changes in the types of resources, the library has also had to dramatically change the services and types of instruction available to the undergraduates. In 1992, Western Libraries held 30 electronic indexes, all of which were CD-ROM products; today, there are over 150 electronic indexes and full-text databases available, all of which are provided via the Internet. The Engineering librarians have had to change not just the types of services they provide to students but also where they provide those services, to ensure that they are reaching even those students that do not bother to come into the library to do

In 1992, bibliographic instruction for the freshman Engineering undergraduates consisted of a library tour and a quiz that tested the students' ability to sort LC call numbers and use a print index to find an article by a given author. Because all of the information that the students needed was physically located in the Engineering Library, including both the print and CD-ROM bibliographic indexes, the library was an essential stop for students working on assignments that required supplementary readings. In this environment, the librarians had many opportunities to provide BI to students when they needed it, and were thus motivated to learn from the experience. Since that time the Internet has risen in prominence; not only have many of the critical resources for Engineering research moved from print and CD-ROM to the Internet, but the students themselves are accustomed to searching the Internet to satisfy their information needs. Because the students are bypassing the library and going directly to Google or Yahoo to find information, they are not learning about how to search for scholarly information, or even what scholarly information is, in some cases. While the introduction of the Internet provides us with the opportunity to teach skills related to effective online searching and evaluation of information sources, it has also eliminated the opportunity to interact with the students at the point of need by removing them from the library.

Fortunately the transition from 1992 to today has been gradual. Over the course of the past ten years the Engineering librarians have had time to develop relationships with the teaching faculty in the Faculty of Engineering, and the support of certain critical faculty members has allowed us to build a well-integrated information literacy instruction program spanning the whole four years of the undergraduate Engineering program. The development of this program of instruction has also been helped by the fact that the Canadian Engineering Accreditation Board (CEAB) requires all students to be exposed to "complementary studies", which include technical communications, and to be taught independent learning skills and exposed to engineering research practices (CEAB 13). Today, there is a completely course-integrated program of bibliographic instruction throughout the Engineering undergraduate program. Rather than waiting for the students to stumble into the library, the Engineering librarians schedule classroom visits, either as guest lecturers or as part of a required tutorial session, to give instruction relevant for to

the work that the students will be doing in the upcoming semester. Thus, instead of teaching the freshmen the mechanics of locating a call number or looking an article up in an index, the librarians introduce them to the services of a large research library, show them the differences between searching Google and a bibliographic database, talk about the importance of evaluating the sources of information, and teach them the basics of bibliographic documentation necessary for scholarly communication. The "common" instructional program continues in second year during a standard course on technical communications: at this stage, the students are introduced to the different types of information sources that practicing engineers use (including standards, patents, and handbooks), and the lessons from the previous year are reinforced.

After the first two years of the Engineering program, the bibliographic instruction is specialized for each of the different Engineering disciplines. All students are required to complete a major design project prior to graduation, so in the third and fourth years instruction is focused on introducing the students to the critical research tools needed to complete their projects. After spending two years using the library catalogue and a general science index, the students are all shown discipline-specific bibliographic databases, encyclopedias, and handbooks. They also receive instruction in the more advanced services available from the library that they might not have needed before, including interlibrary loans and personalized searching assistance.

While we have come a long way since 1992, there is still much to be done. In many ways the instructional program is still dependent on the involvement of committed faculty members; every change in the instructional responsibilities within the faculty requires the librarian to educate the new instructor about the instructional services available and renegotiate for classroom time. There is also far too little of the instructional material available online. We are currently planning to develop a collection of web-based instructional modules that will allow the engineering students (notorious for keeping odd working hours) to learn the skills they need, when they need them, regardless of the time of day.

References

Canadian Engineering Accreditation Board. *Accreditation Criteria and Procedures.* [Ottawa, Ontario]: Canadian Council of Professional Engineers, 2001. 26 April 2002 <http://www.ccpe.ca/files/report_ceab.pdf>.