Abstract

At Queen's University, librarians, computing specialists, and faculty are discovering new partnerships within a library designed to meet information needs for the twenty-first century. Within the Joseph S. Stauffer Library, a shared vision of teaching and learning is unfolding which fosters students as self-directed learners. Collaborative initiatives centre on teaching computer and information skills as well as the uses of instructional technology.

Shared Vision: Learning Partnerships for the Information Age

At Queen's University, librarians, computing specialists, and faculty are discovering new partnerships within a library designed to meet information needs for the twenty-first century. The Joseph S. Stauffer Library opened in September 1994 and offers an array of electronic databases, information services, and internet access on all 100 personal computers. A shared vision of teaching and learning is unfolding which fosters students as self-directed learners. Our new partnerships examine methods of focusing the university community on the need for inclusion of information skills within the curriculum. These technical and knowledge skills are acquired over time and with practise just as any subject is mastered. An education that strives to produce contributing members of the information society must ensure that the foundation for developing information literacy is provided.

Partnerships and Collaborative Ventures:

The Joseph S. Stauffer Library

The new library is a concrete symbol of the symbiotic relationship of experts enthralled in a universe of information and its technology. It is home to Computing and Communications Services, including the Computing Information Centre nearby the Library Information Desk. Librarians have become information specialists who contribute to the academic success of students caught in the
technological labyrinth. Computing experts create the complex technological infrastructure to support the library mission of provision of exemplary service. A close working relationship has been fostered between computing and information specialists and joint ventures are thriving. Outcomes include collaboration on a touch-sensitive Information Kiosk at the library entrance; a Technology Day and a week-long Summer Institute for faculty; complementary internet training sessions; and a plan to integrate an information skills module into the first-year curriculum.

**Scholar-Centred Computing in the Library**

In 1989 Queen's adopted a new vision for computing. *Scholar-Centred Computing* described a fundamental change in the way computing would be used on campus and in the way it would be delivered to users (*Scholar-Centred Computing* 1990, 1994, 1995). It created the infrastructure needed by the library to provide the university community with access to expanded electronic information resources. Continuation of the plan supported the joint acquisition of and access to seven journal indexes with holdings links by a consortium of libraries; networked CD-ROM databases; and use of INFOQ (Queen's Online Information System), Mosaic, Netscape, and Gopher.

*Scholar-Centred Computing* forecasts state of the art access to an array of information and learning resources in the library. Gateways to world-wide information via the library gopher and web home page as well as links to locally produced class materials are becoming a reality. The virtual library is now at the core of the information vortex.

**The Learning Technology Unit (LTU)**

The mission of the LTU is to encourage and support the integration of instructional technologies in the classroom. Together with the Instructional Development Centre, Queen's librarians, Queen's Television, and Computing and Communications Services, the LTU staff help faculty learn, use, and share experiences with technology as they apply it to teaching. The unit facilitates
learning through consultation, lectures, presentations, making courseware available, and providing on-line access to course materials.

The LTU and its support network are currently planning a Summer Institute for faculty at Queen's. The Institute will provide up to thirty faculty with one week of hands-on exposure to current teaching technology. Topics will include the World Wide Web; Freelance Graphics presentation software; creating a Hyper-G page for course materials; authoring software using Toolbook; and methods of communication between class and faculty members (Eudora, listservs, newsgroups, and chats).

Librarians will focus on the potential of the internet to contribute to student investigation for specific assignments and faculty scholarship. They will tour the group through a research strategy on the web, the organization of subject resources on the library gopher and home page, and provide perspective on the internet as one of the many electronic resources available for information gathering. Computing trainers will expand on this foundation with the building of a web page.

Instructors from library, computing, and faculty departments who are working together for the first time are gaining an appreciation for one another's talents. Until now, the expertise of librarians in teaching information skills and their knowledge of information technology was not widely acknowledged. Computing trainers have remarked that they are now aware of the complementary nature of the two units. While they have the technical computer expertise with hardware and software, librarians focus on strategies for using information-gathering applications, their design, and their relationships. Both contribute to the skills and knowledge of information literacy.

**Instructional Technology Listserv (INS-TECH)**

Another consequence of the opening of the Stauffer Library is that the paths of many members of the university community interested in the potential of instructional technology now converge at that site and a number of informal, but important, conversations have begun there. One such conversation involved
librarians, faculty, and computer services personnel. In reviewing leading edge instructional initiatives, they concluded that it would be worthwhile to establish a listserv relating to the impact of technology on university teaching and research. Uses of the list would include exchanging views and tips, asking questions, and possibly discussing some of the philosophical issues at stake in this transitional period. Such a list might foster collaboration in research and development activities.

After a carefully thought-out process of inclusion and invitation, INS-TECH is up and running with a growing numbers of subscribers who are delighted to have improved lines of communication on this significant issue.

**The Instructional Development Centre (IDC)**

The mandate of the IDC is to support, promote, and enhance the quality of teaching at Queen's through a broad range of programs and activities. Services are offered to faculty and teaching assistants (TAs) and include a Teaching Series, individual and departmental consultation, a resource library, and special orientation programs.

The library offers a training program which complements the TA sessions offered by the IDC. At the Stauffer Library, TAs learn to serve as research strategy mentors for their own students. In the first-year sociology class of 1,000 students, a research strategy guide is completed as part of the first formal research essay. The strategy serves as an information-finding map as well as a record of how resources were gathered. TAs are trained to use the strategy themselves so they can facilitate student learning of the search process and trouble shoot problems in their weekly small-group meetings.

**Education in the Information Age**

The greatest challenge for society in the twentieth century is keeping pace with the knowledge and technological expertise needed to find, apply, and evaluate information. People who understand how knowledge is organized, how to find information, and how to evaluate it, are said to be information literate. They are prepared for lifelong learning, because they are capable of using information to
direct their own process of inquiry. In a society engaged in the production of vast amounts of information, information literacy is recognized as a fundamental ability.

The American Library Association Presidential Committee on Information Literacy refers to information literacy as a survival skill for the Information Age rather than just a desirable educational goal. "To respond effectively to an ever-changing environment, people need more than just a knowledge base, they also need techniques for exploring it, connecting it to other knowledge bases, and making practical use of it. In other words, the landscape upon which we used to stand has been transformed, and we are being forced to establish a new foundation called information literacy. Now knowledge ... is this country's most precious commodity, and people who are information literate - who know how to acquire knowledge and use it - are America's most valuable resource." (ALA Presidential Committee on Information Literacy 1989, 10)

**The Need for Information**

In 1987 several Ontario Ministries, the Ontario Institute for Studies in Education, and major Toronto employers conducted a study to identify preferred employee skills (Russell 1987). The participating companies and ministries intended to use the information to develop new hiring practices as well as employee training programs. A task analysis was performed on a wide range of jobs including test engineers, buyers, and loan officers.

Engineers indicated they performed 37 different types of tasks none of which related to their engineering training. The tasks recorded by other professionals were similar to those of the engineers. In a comparison of the tasks for each job, the researchers identified a set of generic skills that all employees should acquire. The skills that were identified as being in short supply among the labour force in Ontario were: synthesizing, coordinating, and innovating information; mentoring and negotiating with people; and precision working, setting up equipment and manipulating "things".

**Computing and Information Skills**
As students are observed at work in the Stauffer Library, it is apparent that information literacy hinges on reciprocal computer and information skills. Computers bring us staggering access to information, yet few students are taught to harness these machines to their advantage. Those unable to manipulate computers effectively cannot retrieve the best, the most useful, or sometimes even any, information.

Librarians have long suspected that students have a limited understanding of electronic information tools. Computing trainers have confirmed these fears in comparisons of daily questions answered at respective information desks. Access to electronic information frequently presents a false security and ease of retrieval in the path to information. Students must learn that the success of a computer search is entirely dependent on their understanding of search principles and creativity in search design.

The offering of internet resources has magnified the problem of selection of information-finding tools. Students are losing sight of the full continuum of learning resources and their relationships. Computers are part of the wider category of information tools and require their own special search methodologies. They are efficient and fast but in many investigations they are not suitable or even readily available. Internet resources are both marvellous and mystifying but they are not replacements for the traditional print materials within the library. The context and applicability of information sources is obscured as the medium becomes part of the message.

Information-literate people understand the role of computers in the search process. They are aware that computers are not thinking machines and that effective searches rely entirely upon the searcher himself. The adage "garbage in, garbage out" has been used to describe this phenomenon. A computer only retrieves what it has been asked to find, and if the terms it is searching are not useful or relevant to the task at hand, the results of the search are equally useless.

Resource-Based Learning
One way in which students become information literate is through a process that allows them to become active participants in their own learning. This process is known as resource-based learning. Resource-based learning promotes the achievement of both subject and information literacy skills objectives through exposure to and practise with diverse resources. Students acquire knowledge about how information is arranged, what formats it comes in, how to identify sources appropriate to different research topics, and how to evaluate the content of individual sources. Through continuing practise, they acquire the skills necessary to find and retrieve information from all types of materials. Insight into how and where to find information builds self-confidence as learners direct their own inquiry process.

Educators who offer their students resource-based learning experiences, provide opportunities for them to become information literate. In 1982, the Ontario Ministry of Education published a support document entitled *Partners in Action: The Library Resource Centre in the School Curriculum* (Ontario Ministry of Education 1982). This document is a landmark in the history of resource-based programming in Ontario because it acknowledges this type of learning as a preferred model for integrating information skills into the classroom. Resource-based programming thrives in many elementary schools as a direct result of *Partners in Action*. Highschools have been slower to integrate the learning of information literacy skills into the classroom as part of a standardized curriculum. Many universities have not yet taken up the challenge of creating a mandatory information skills component for all undergraduates.

**A Shared Vision of Learning**

The new library is demonstrating that students need ongoing learning opportunities to master the information tools now available to them. Students would profit greatly from resource-based learning programmes which integrate information literacy skills into the curriculum. During discussions between librarians, faculty, and computing staff, it has become apparent that a group of us share the desire to educate students as self-directed learners.
Several faculties have already integrated information literacy skills in the subject curriculum. Since 1989, librarians at the Education Library have offered a credit course to B.Ed. students entitled "Teaching for Self-Directed Learning." Welcomed by the education faculty, this course was one of the first of its kind in Canada to weave subject content and literacy objectives together into a cohesive whole. The discipline of education was a natural choice for this design because it targets future educators as envoys of the message.

Since 1993, the Faculty of Education integrated a resource-based learning unit into the professional skills component of the degree. All 650 students are required to complete this independent study project which draws on issues in classroom management as a vehicle for learning information-literacy skills. The faculty also agreed to revive the School Librarianship program for practising teachers in 1989, after a 10-year hiatus, at the instigation of the Education Library. This three-part course trains educators in the design and implementation of resource-based programs and contributes to school revitalization through renewed library initiatives.

The Health Sciences Library devised an information literacy program in 1991 which spans the four years of the medical curriculum. A minimum of 20 hours of instruction is provided to students in small-group classes over these years to allow ongoing practise and development in the mastery of information skills.

The resource-based learning model designed at the Education Library has potential to be used with all first year students in the Arts and Sciences (about 2,500 at Queen's) in a standardized and integrated fashion. Instructors at the Stauffer Library are presently working with this independent study design as a means to reach large numbers of students with a limited number of instructors, merge information-literacy skills with subject content, and allow for individual time management and learning styles. We hope to test this model in the fall term with a class of 1,000 first-years enrolled in sociology.

**Partnerships in the 21st Century**
As the age of information evolves we anticipate many new challenges and opportunities for the university community. Predictions are dangerous, but it is certainly safe to say that in a few years virtually all of our roles will be altered, if not transformed utterly. In such a mercurial environment we will need to find new ways to accommodate our fundamental purposes to develop and transmit knowledge. In this process of change, partnerships based on the shared commitment to intellectual values among all members of the university community would seem not only desirable but inevitable.

References

