

The wired classroom

Dream and reality

by Peggy White and Shauna Rutherford

Does space affect teaching? Picture yourself at the front of a large, impersonal lecture theater facing 250 strangers or in a small, airless, poorly designed room. Connecting with students can be a difficult challenge under either of these circumstances, even for gifted educators, but it is even more difficult for those with average instructional skills.

The book *Seven Principles for Good Practice in Undergraduate Education* provides guidelines to some of the critical elements that contribute to effective teaching and learning:

“Good practice:

- Encourages student faculty interaction
- Encourages cooperation among students
- Encourages active learning
- Gives prompt feedback
- Emphasizes time on task
- Communicates high expectations
- Respects diverse talents and ways of learning.”¹

Intuiting from these principles, it appears obvious that some spaces are more contributory to teaching and learning than others. A good instructional space should facilitate and enable “good practice.” Does the traditional library classroom setting do this? Decidedly not. Neutrality is often the best it achieves. There is little opportunity for instructor/student interaction, active learning, collaboration, or feedback. It is the teacher who spends “time on

task” not the student. In fact, while teaching is occurring, learning is moot.

Traditional classrooms also do not meet the standards and expectations of today’s undergraduates. Members of Generation Y are often criticized for their short attention span, but author Don Tapscott proposes that they really just have a different way of learning and an intolerance for boredom.² There is a big difference. Students who are engaged in their learning will be attentive, but engaging them is not necessarily easy.

Unlike professors who have an entire term to build relationships with students and gain their confidence and respect, most librarians have one class period (often not more than 50 minutes) to “make it or break it.” And it is no secret that the research process does not enthrall, so anything we can do to make the session more interactive, interesting, and meaningful is crucial if learning is to take place. The right space promotes this and gives us that opportunity.

Background

In 1997, the University of Calgary (UC), a medium-sized university of approximately 20,000 students, undertook a strategic planning exercise that ascertained which aspects of a university education were critical to student learning. High on the list was the need for a more learner-centered environment. Skills such as information literacy that would enable students

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to succeed in this new environment became even more important, but how to achieve this was the question. A new library space that would help realize the transformation process was articulated and in 1999 the Information Commons (IC) was opened.

Two of the central conceptual building blocks for the IC were the idea of a scholar's workstation and a unified workplace. The IC provides the space, technology, and expertise needed to support the scholarly use of information resources in all their forms.³ Access is provided to productivity tools, such as the Microsoft Office suite, as well as research resources, including the Internet, library databases, and catalogs. A suite of instructional programs and a state-of-the-art, wired classroom suitable for hands-on instruction supports this objective. Expert assistance is available for all resources. In this classroom, students receive instruction in all components of the scholarly process, from research to final paper or presentation.

The design

Central to the effective use of the space are the actual design elements. The classroom is highly flexible, allowing for both large and small classes. A central moveable wall allows the 50-seat space to be broken into two smaller 25-seat classrooms. When the classroom is in its large configuration, dual overhead beam projectors project the same information onto two screens, one located on each side of the classroom; therefore, visibility is always good. A microphone enables the instructor to easily project to the full space. The high-density screens provide a high-quality image, allowing the instructor to teach in normal lighting or use a dimmer when desired. Except for the wall, the space is always ready to use without a lot of preparation.

The IC classroom is designed to facilitate interactive learning. Aisles between the workstations are wide, allowing an instructor to easily assist an individual student. The space enhances the interaction between student and teacher by encouraging contact and discussion. Workstation desks are 6-feet long, which allows for the joint use of a station by two students. Collaboration and interaction between students is easily achieved and learning improved. "Working with others often increases involvement in learning. Sharing one's own

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ideas and responding to others' actions sharpens thinking and deepens understanding."⁴

Workstation desks are positioned so that the PCs are angled towards the front of the classroom. Students have easy visibility of both the instructor and the computer monitor at all times during an instruction session. Time spent on task, active learning, and the rich, rapid feedback provided by going live are a classroom reality. In short, the environment includes many of the elements of the "seven principles of good practice" identified as critical to the learning process. The space is comfortable and ideal for teaching. Unfortunately space alone does not determine success.

Connectivity

Designed for hands-on instruction, the classroom represents a long-awaited goal. Yet, fruition of this goal is only possible if network conditions are favorable. Depending on the class and database being taught, between three and four servers may be involved in the delivery of the product. If any one of these is less than satisfactory (either down or slow), the goal of achieving interactive instruction will fail. A teaching environment that depends on simultaneous interaction between the students, the teacher, and the electronic database does not tolerate lengthy delays and Web crashes.

The following example is illustrative of the complexity surrounding teaching in a networked environment.

Access to databases at the UC library is provided over the Internet. The first and most important server in this configuration is the Domain Name Server (DNS), which sends the URLs out to the appropriate database supplier. The DNS is usually quite reliable and rarely

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goes down, but the same can not be said of the University Web Server (UWS) through which the DNS is accessed.

The UWS delivers the library's Web pages and establishes the internal link to the databases. As the demand across the campus for Web access increases, the UWS often experiences slowdowns or crashes due to bandwidth problems and traffic volume. Even when the UWS and the DNS are functioning well, other problems can arise depending on the databases being taught.

Until recently, many of our most popular databases were offered over an ERL server. This server housed the software that connected us to WebSPIRS software and our Silverplatter databases. In situations of heavy simultaneous use, the server slowed to a crawl or denied access altogether. Baffled by problems we did not understand, finding a solution was not easy. Technicalities such as port settings and inadequate server capacity were foreign concepts to those providing instruction. It was difficult for us to ask the right questions and to describe the problems in a sufficiently detailed manner to prompt a correct response.

The process was long, arduous, and costly. Most significantly, the teaching librarian lost confidence in his or her ability to deliver live, hands-on instruction to large groups of students. Even the most sanguine of us faces a hands-on class with a fair bit of trepidation. Much of our focus is on technological issues rather than content and pedagogy.

Staffing

Technology is not the only challenge instruction librarians face in changing teaching venues to the IC classrooms. The new facility greatly raised our profile on campus. Requests for instruction have steadily increased and a record number of students have come through our doors for information literacy sessions. We welcome this exposure, but it has resulted in a considerable increase in time that a

librarian must devote to the instruction component of his or her work.

All instruction librarians at the UC library hold a diverse portfolio that includes collection development, reference, departmental liaison, and committee and faculty service. In addition, whereas our old lecture or demo-style BI sessions usually only involved one librarian, hands-on sessions generally require participation of one-to-three additional staff members. Our complement of librarians, library assistants, and technical support staff did not increase in response to this demand, so the pressures are significant

Pressure also came from expectations that our teaching style would change to fit this new learner-centered environment. Sessions can be interactive. Students can work collaboratively with the instructor and other students. Not everyone welcomes this change. There are a few among us who seldom or never choose it, opting instead to go out to lecture classrooms or use library spaces intended for demos only.

In a lecture or demo, control over session content is entirely retained by the instructor. In a live, hands-on environment, some of this control is inevitably sacrificed because students can wander, get lost, or simply redirect the focus of the session. It takes longer to deliver the same information and some content will unavoidably be lost. Finally, there is always the ever-looming possibility of system failure.

Instead of facing these challenges, a librarian may well choose to reject this method of teaching and continue in the traditional manner. Unfortunately, while control of content is thereby retained it does not mean that comparable learning takes place. Teaching is not learning.

In an active learning environment, students must take some responsibility for their own learning. In fact, the high expectation of the student's ability to learn is another key teaching principle.⁵ In order to achieve this desirable outcome, an instructor must be prepared to relinquish some control, put learning in the students' hands, and risk a possible loss in content and coverage. The seriousness of this matter can not be understated. It often prevents instruction librarians from taking full advantage of the hands-on capabilities of the wired classroom. When you have only 50 minutes to deliver a session, the need to cover basic content often pushes aside the much-desired student practice and learning time.

Conclusion

Despite the many issues and challenges that we have faced, there is no question that most of the instruction librarians at UC consider the IC classroom to be a resounding success. It has enhanced our image as professionals and improved both the teaching and learning experience.

Some typical comments include "the quality of my instruction experience has gone way up with the new facility as many of the [technical] details are now taken care of, like the workstation setup, the projector setup, etc.;" "the presence of so many computers and the professional design create an impression of competence and flair which we need to have when dealing with the gen-xers;" "I think that the [Information Commons] has actually improved my teaching style. I'm better able to address the needs of different learners. I always provide handouts, have a PowerPoint presentation, and then allow students to go hands-on for experiential learning. I don't think I would have been as aware of this had we not had to teach in the IC."⁶

Does space affect good teaching? Absolutely. A well-designed space enables an in-

structor to tailor his or her teaching style to advance learning. In the case of instruction on electronic resources, experiential learning is essential if concepts are to be absorbed and retained. What remains is the ability of the instructor to adapt to something that is more flexible and less controlled.

Notes

1. Arthur W. Chickering and Zelda F. Gamson, "Appendix A: Seven Principles for Good Practice in Undergraduate Education," *New Directions for Teaching and Learning*, no. 47 (1991): 63.
2. Don Tapscott, *Growing Up Digital: the Rise of the Net Generation* (New York: McGraw-Hill, 1997), 108-9.
3. Information Commons. "Information Hub Planning Document." Calgary, AB: University of Calgary, 1999. Available online at <http://www.ucalgary.ca/IR/infocommons/conceptdoc.htm> [cited 2 January 2002].
4. Chickering and Gamson, *Seven Principles for Good Practice in Undergraduate Education*, 65.
5. Chickering and Gamson, *Seven Principles for Good Practice in Undergraduate Education*, 63.
6. Comments from University of Calgary Librarians. ■

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