



The Teaching Exchange

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Faculty Forum: Teaching Innovations

Brown faculty have much to share with colleagues about the innovations they have introduced into their classrooms. This issue includes contributions on teaching interview techniques, the pedagogical implications of a collaborative Brown–RISD course and how one faculty member has used the new CMS tool WebCT to enhance communication with students. Many thanks to Catherine Dube (Bio–Community Health and Family Med–icine), David Laidlaw (Computer Science) and Thompson Webb (Geological Science) for their contributions below. Faculty Forum is a regular feature of The Teaching Exchange and we hope that YOU will be inspired by these ideas to share yours in the next issue.

Simulations for Sensitive Topics: The Sexual History in Medical Interviewing (BI–371)

CATHERINE DUBE, Ed.D. (*Community Health and Family Medicine*)

In the Medical Interviewing course (Medical School, Y01) we employ standardized patients: actors, trained to portray specific roles. These standardized patients are used to provide medical students with the opportunity to practice sexual history skills for the first time. The actors are provided with general scenarios to follow, and then they improvise their roles with students who interview them in clinic rooms. These patients are remarkably realistic, and students not only have the opportunity to ask difficult and awkward questions for the first time, but also can try out new strategies without risk to an actual patient interviewed in the hospital. After the interaction, these standardized patients are trained to give feedback to students on their interview technique, so the students benefit not only from the views of their faculty and peers, but also from the perspective of a health care consumer.

This exercise has been extremely well received by medical students, and has proven effective in providing opportunities for them to apply related concepts and skills to a difficult interaction. For example, students learn that patients generally talk frankly with health care providers about their sexual problems and experiences if it is relevant to their medical care. This exercise relieves student anxiety about the topic, freeing them to practice and develop how to communicate comfort and competence with their interview techniques.

Collaborative Classroom Teaching of Art/Computation/Science

DAVID LAIDLAW (*Computer Science*)

RISD Illustration professor Fritz Drury and I are just finishing up team teaching a new Brown/RISD class in which students from design and computer science are working together to create scientific software in Brown's Cave, an immersive virtual environment. During the first half of the semester, students implement 10 design assignments in pairs: one design student (either from Brown Visual Arts or RISD)

and one computer science student. Part of class time is spent teaching background fundamentals in design, computer science, and scientific application, such as understanding time-varying 3-D fluid flow in coronary artery models. The remainder of class time is spent on group critiques, or crits, of the assignments. In the second half of the semester students propose and implement a project that pulls together the lessons from the earlier assignments. These are group projects, with two to five students per group. Each group is again split among design and computer science students.

The development of the Brown/RISD class was a challenge. The process began when I learned that the chair of RISD's Illustration department would be visiting the Cave facility. I jogged over to chat, and we talked about our goals over lunch. We found that his goal of developing curriculum to broaden the marketability of RISD students meshed well with my goal of incorporating better visual design into user interfaces for scientific software, so we began to work on a win-win project—a new course.

My next step was to take Painting 1 in RISD's Illustration department, my first art class since elementary school. I was immersed in many of the concepts I have been talking about for several years in my scientific visualization research: color, brush strokes, layering, etc. More importantly, I was exposed to crits, which are arguably the most important part of art and design education. (*Editor's note:* see the [January 1999 edition of The Teaching Exchange](#) for a discussion of the pedagogical value of crits across the curriculum.

The development of the class started with a faculty discussion group, proceeded with syllabus and course design, and continues with changes made almost weekly as the class progresses and we learn what does and does not work. The faculty discussion group included a dozen RISD faculty and several folks from my research group. We met for several hours twice monthly through most of academic year È1 È2 to exchange our understanding of scientific problems, of the interactive and visual design medium the Cave has to offer, and of the skills visual designers have to offer in addressing the scientific processes in the Cave. Perhaps the most valuable outcome was a better understanding of the vocabularies and backgrounds we could expect from the two disparate populations making up the class. With that understanding, we built our initial guess at the class structure over late spring and summer. It has been refined extensively as we faculty continue to learn.

The students are producing amazing results—I anticipate that some of the projects will have publishable research results and some of the students, both from Brown and RISD, will continue on to research careers. The class has also gotten some publicity externally: *it Science* magazine noted it in its Random Samples page in October and *The George Street Journal* wrote about it in the November 22, 2002 issue.

Teaching Geology with WebCT: Opening Communication with My Students

THOMPSON WEBB III (*Geological Sciences*)

I was pleased to take up Ellen Waite-Franzen's invitation to try out WebCT as part of the initial group of faculty using the newly acquired course management (CMS) package. Each fall, I teach a sophomore/junior-level course for geology and biology concentrators called *The Fossil Record* (*Geological Sciences* 31). With a prerequisite of Geo 22 (*Physical Geology*) and Biology 20, the course usually attracts 15 to 20 students who are interested in past life and past environments on earth. With a lab and two field trips, it gives the students some hands-on time with fossils.

Three features of WebCT worked well for me. Its calendar function allowed me to map out the schedule

for the classes, field trips, and labs with links to appropriate pages on my previously developed Web site for the course. Its password-protected environment allowed me to upload Powerpoint presentations from class and make them available soon after each class. And its discussion section or newsgroup allowed me to post questions for the students to answer before each class. Reading the answers as I prepared for class helped me learn both what was confusing to the students and what they were able to learn readily from the textbook, journal articles, or recommended Web sites. I then was able to focus class discussion and lectures on the areas that needed clarification. One feature of WebCT that I did not make full use of was student portfolios to which students can submit their work electronically. The portfolio for each student is accessible only by the professor and the student, so commenting on their work can be done in a confidential and paperless environment. I look forward to using the portfolios next year.

As always, the students taught me new ways to use the technology in WebCT to promote an active learning environment. Normally a week before each exam, I give the students a review sheet of 20 or more questions. I then select 8 to 10 questions for the in-class mid-term exam. This year they used the discussion section of WebCT to post and share answers to the questions before the exam. They organized this for themselves, and each student had a question or two to research and answer. They also posted their own questions when clarity about a point was needed. They created their own cooperative learning environment.

After a successful use of the discussion section for the mid-term, the students were ready for my final review. I did not hold back. On the Tuesday before the Friday final, I found over 98 postings on the discussion section. When I met the class for a review session that afternoon, I already knew from reading the postings that the students had found and posted most of the information that I was hoping to read as answers to my questions. Nothing was obscure about my questions or their answers; the information was available thanks to the efforts of 90% of the students. I was pleased with most of the answers and had posted just a few queries to provoke further research. I saw directly how diligently the students were studying and researching the answers. I also had the satisfaction of seeing what I had taught being reflected back to me in their answers. For each question, at least one member of the class had caught on, and others might follow their lead.

I came into the review session impressed. Several students came in a little overwhelmed. They had worked hard but now had a lot still to learn. Despite all their work and sharing, they were anxious about learning it well enough for the Friday exam. During the review, some of them spoke up about their anxieties. I answered them by noting how well everyone had done so far and urged them to see how knowing one answer would help with other answers. Once they saw the linkages, there was much less to memorize. That was the challenge. I urged them forward.

When the review ended, four students lingered chatting among themselves. When I asked about things, three of them noted that they still felt anxious. I already knew from reading their discussion postings that each of these students had answered the questions assigned to them by their classmates. These were serious students who had done well with single questions but were feeling too anxious to study the whole set of 30 questions. It seemed like too much to them. I became concerned. So I invited them to work with me and go over the review sheet and rank the questions. They spoke of an interest in dealing with some questions as take-home questions and thus decreasing what they had to learn for the in-class final. I said, fine, let's see what we find. Our review took about an hour, and after it, I agreed to delete three somewhat redundant questions and to designate 5 overarching questions as take-home questions, one of which each student could write up for 15% of their final exam grade. The remaining questions now seemed manageable to the students, and they were ready to alert their fellow students to the change in plans. I was nervous about the late change but trusted the students' judgment that it was ok. The students seemed amazed as this turn-about in events, and I was pleased at having turned a sub-optimal learning situation

into a stimulating one for them. What is the point of a final exam if it does not induce a new level of learning and understanding of the material for the students? A key to my willingness to act on the students' concerns was my respect for them and the work that they had done that I read on the WebCT discussion.

I then e-mailed the class about the change in plans and also posted the change as a message on the WebCT discussion. Two students wrote me for extra time with the take-home part, which I granted, and the rest of the class came to the final with 1- to 5-page typed answers to their chosen question. I had been worried that in simplifying the exam that I might not get much of a spread in scores, but I had the full range from 71 to 99 with just five A's and two C's. The students space themselves out no matter what I do, even in the face of having collaboratively answered all my questions.

One of the four student negotiators who got a 79 wrote me after I handed the exam back to say, I am curious how you feel about how the final turned out. Did you feel good about the take-home plus in-class break up of the exam? Did you feel the exam was still challenging enough, and that we performed well? I can tell you from one student's perspective that the take-home was really interesting for me. A lot of studying time was put into that one question and while I normally would have been preparing for all questions at once, I am genuinely happy with the end results. I did have time to prepare for the in-class questions, (well...I still don't have the human evolution stuff down as you could see...) and I thoroughly learned about horse and whale evolution. Also the relief of anxiety from the larger questions that I did not HAVE to go through was a great booster for my esteem about the course and the exam. I thought the in-class exam was very fair, and I hope other students were as appreciative of the shifts that you made for the sake of our learning ease and did well. Thank you again for showing your concern for students and learning, this is so important for the thorough experience of learning/teaching.

There is nothing like a little communication to improve the learning environment in a course. The WebCT Discussion section allowed that to happen and for me to peek in and see what tremendous learners Brown students can be and are. With that perspective, I was ready to work with them to shape the final into the learning exercise that they and I wanted. Now to find out what will emerge from working with the students next year.

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