

We are All Students Now

Learning How to Teach Remotely

By Ben Rosenberg, P.E., LEED AP

I taught Concrete Structures in the Architecture program at the Rhode Island School of Design (RISD) in the Spring 2020 semester. The course was envisioned by my predecessor and maintained by me as a technical and qualitative exploration of designing concrete, with a series of rigorous but practical design examples for different elements. The lectures included case studies of buildings, discussions of the theory behind concrete design, and sample problems solved on the chalkboards. At the end of the semester, there would be a concrete casting project where the students would split into groups, build their own formwork, mix concrete using materials provided to them, and cast simple home furnishings. It was to be genuine engagement with concrete on every structural level, providing an understanding of concrete structural design and materials that would translate into their studio courses and, eventually, into their work in the industry. And I was teaching a group of incredibly gifted and creative students.

The first third of the semester was terrific, and we were really hitting our rhythm as a class during that time. Then, over about a five-day period that fell between lectures, everything changed in the region. I remember sitting on my couch watching CNN and seeing the NBA postpone its season and thinking how wild that was. Five days later, my wife and I were both working from home, our kids were home with us, that week's lecture was canceled, and all future lectures were going to be conducted remotely – brave new world.

So what did we do, the students and me? We did what all good engineers and architects do: we adapted. Engineers adapt all the time. Project budgets and schedules change, deadlines get pushed or moved up, unexpected existing conditions are uncovered, surprise emails pop up on Wednesday, and there goes your week. As do my colleagues, I pride myself on the ability to adapt to the dictates and demands of a project. The mission was clear: adapt to the new reality of remote teaching to best serve my students and ensure that I could fulfill their expectations, and mine, of what my concrete course should be.

Content-wise, I found remote teaching successful. We met every week on Zoom at

the regularly scheduled period, with lectures recorded so that students in other time zones could view when able. I delivered lectures with the same content and even added more multimedia use of videos, with screen sharing and flipping between windows easy and intuitive (a video of precast plank manufacturing in Spain set to techno music was a particular favorite). I found it relatively easy to speak during the lectures and take the students through the material. I did not use a digital



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pad that allowed me to solve problems by hand in real-time, instead relying on writing out problems ahead of time and scanning them in, but there is no reason I could not switch for future classes. In-class quizzes were necessarily eliminated, and the midterm exam was take-home, but that exam and the homework assignments were comparable to those planned before going remote. I was pleased that the content of the course was not significantly watered down, which was admittedly easier than for more hands-on classes.

But for me, the success and pleasure of teaching are standing in front of the students in the classroom. I have had mentors in college and professionally that taught me the importance of good public speaking and how to engage your audience to communicate effectively. Knowing the material and being able to deliver it and use your resources effectively is one part. But understanding the audience is just as critical. This is what I truly love about

teaching – taking the temperature of the room, reading the students' body language, making subtle changes in delivery and pace in response to what I perceive in the audience. This is such a crucial element of my teaching style, and it is the thing that translates the least to remote teaching. Knowing that students were watching the lecture from a variety of places, I did not mandate students keep their video or audio on, and it was very odd to talk into the silence for three hours. This is different than in the professional world where clients and colleagues almost always have their video on. The human connection on those calls is much stronger and leads to necessary interaction, something that was missing in my remote lectures. I also know how easy it is to lose focus or get distracted watching remote videos, live or otherwise. For future remote semesters and with more planning, engaging the students more and determining ways to have more people with live video would greatly help the class feel more personal.

Based on a review of assignments and exams (and assuming students completed the work on their own), there was minimal difference between comprehension and retention for remote lectures versus in-person lectures. I did not fear that the course material would go unabsorbed. There is still something vital about being taught the material as opposed to learning it yourself, so remote teaching absolutely serves its desired purpose. There are simply lessons learned to increase the enjoyment and fulfillment of the course next time.

Concrete is not a uniform material. Almost every aspect of concrete can be changed by varying the materials and processes used in its creation. That variance determines the success of the finished product. So it was for those of us teaching courses in the spring of 2020. Vary the method of instruction, vary the assignments, the projects, the interaction, the design examples, and come out with a successful course and students who value the time they have spent with you. Do it a little on the fly, creatively, unexpectedly, and perhaps without precedent? Well, we are engineers – it is what we do. ■



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