Lecture is Dead: Take 3

I'm not dead.
Ere, he says he's not dead.
Well, he will be soon, he's very ill.

— Monty Python and the Holy Grail, 1975

Large lecture sections are a reality for most of us who teach in public universities. Colleges have been known to put over 1,000 students into an auditorium for a freshman biology course. One thousand people in an auditorium where U2 or The Rolling Stones are performing would be called "intimate," but for the average biology professor explaining the enzymes of glycolysis, well... let's just say that the situation is not ideal.

Yes—you in row Y, seat 79. You have a question about glucose phosphate isomerase?

Facing a potential PR nightmare (students pay more to see us than they do for most concert tickets), our administrators try to help by equipping us with new technology so as to better educate (or, for some of us, entertain) the masses. I recall three different waves of technology that were intended to improve the educational quality of large lectures, but in each case the technology actually drove students away.

At the University of Minnesota in the 1970s, the freshman biology course used a new technology in the lecture auditorium—videotape! It now seems archaic, but at the time the plan was to create a high-quality presentation and record it, and then use the tape for the day's lecture. Students would "engage" in a high-quality lecture via videotape, and the professors could go back to their labs and do their research. Since the videotapes were used over and over again each semester, a market emerged for lecture notes. Enterprising students from previous semesters would stand at the back of the lecture hall on the first few days of class and sell copies of the notes for the entire semester. Needless to say, attendance fell off quite a bit after the first week. It was a good attempt, but the videotape experiment ended in about 1980 when the tapes wore thin, or the students tired of paying tuition to watch recorded lectures, and professors again started showing up to give lectures—live and in person.

Jump ahead to 2002. I had a single semester leave and was able to attend lectures in many areas of biology. This was the time when PowerPoint was making inroads because book companies were supplying professors with easy-to-use presentations, and many auditoriums were being equipped with high-quality presentation equipment. The slides were typically excellent—very professional images, graphs, etc. And using PowerPoint was easy; you did not need to be a computer geek to press the space bar to advance the slides. Many of the lectures I attended in 2002 involved the lights of an auditorium going off at the start of class, and then being turned on at the end—nothing but PowerPoint slides for the entire time. Depending on the quality of the professor running the slides, most students fell into a cognitive coma (a.k.a. "PowerPoint Paralysis") after a few minutes. But students had no worries about "keeping up" or even staying awake because classroom management systems, like BlackBoard or WebCT, enabled them to download the same PowerPoint files that were used in class. Attendance levels fell quickly in lecture courses that were dominated by PowerPoint—why attend if you simply fall asleep and look at the slides later? Like the videotape, PowerPoint was intended to make lectures better, but its misuse, or maybe abuse, drove students away.

Now comes a third technology that is supposed to improve lecture-podcasting. Podcasting is essentially an audio recording that is published on the Internet, either within open or restricted Web sites. Professors at many universities have the option of recording their lectures and then having them podcasted. Students then have a choice of listening to podcasts on their computers, or on their portable MP3 Players, e.g., iPods. (It may sound somewhat complex for professors, but for a college freshman, listening to a podcast is as difficult as accessing e-mail.) And if students elect to listen to the podcasts on their computers, they can combine it with the PowerPoint slides used in the course—it's almost like being there!

I started podcasting my lectures for my freshman anatomy and physiology course this fall as part of a small grant—that, and I'm a sucker for new technology. We post the MP3 files on an open blog site that describes the daily activities of the course (http://blog.lib.umn.edu/msjensen/pstim1135/). I have not run any sort of experiment yet on attendance or student performance, but I did talk to one student who made me think that podcasting might put traditional lecture on life-support.

Melissa is a student who works between 20 and 40 hours a week and has about a one-hour commute to campus. On Wednesdays she has only my class on her schedule, and she typically works until midnight on Tuesday nights.

I skip class — I just download the podcasts. They're great!

It's important to note that Melissa does attend all labs, where attendance is required, and has successfully competed all the lecture exams—she is passing the class. But it should also be noted that she already has quite a few college credits—not your typical freshman.

For good students like Melissa, attendance appears not to be a critical factor for success in the typical class. This is probably true throughout the history of education—the good students can learn from the book, from someone else's notes, by looking at the PowerPoint slides, by listening to the podcasts, etc. If a good student has motivation, he/she will likely succeed no matter how poor the learning environment—he/she will overcome the obstacles. But what about the struggling freshman—the one who has to work hard just to pass. For these students the podcasts represent one more way to learn biology. This is in addition to the book, study groups, labs, PowerPoint files, etc. ... Podcasts represent one more tool for students to use to understand biology—and if all used together, they might indeed pass. However, the temptation is there—

Dude! Just blow-off lecture and listen to the podcast later!

It is imaginable that someday there will be a biology course meeting in a dark auditorium, the computer projection system quietly humming, and the biology professor talking about the enzymes of glycolysis, and of course, being podcasted—and no students are attending. Will this event mark the death of lecture?

They stab it with their steely knives but they just can't kill the beast.

— Hotel California. The Eagles

Murray Jensen
Associate Professor
College of Education and Human Development
University of Minnesota
msjensen@umn.edu