

# 7 things you should know about...

## Lecture Capture

### Scenario

At medical school orientation, the incoming students in Leah's class were warned that the lecture capture system used at the university should not be seen as a substitute for attending lectures. In the first week, she realized she would never be tempted—there was so much information to absorb and so little time in the classroom to assimilate it that she found herself downloading the recorded lectures to fast-forward to the parts she didn't understand so that she could listen again to the explanation and stop the recording to clarify her notes.

During her second year, Leah had to attend a funeral and missed a key class on respirator settings in her pulmonology course. Late that afternoon she was able to download the lecture and watch it on her laptop as she rode the train back to campus. Someone in her study group had added to the recording a bibliography reference for a related article. She requested the article online that evening from the medical library and found that it explained key elements discussed in the lecture.

Leah's third year in medical school found her assigned to clinical rotation at a rural site five hours from the university. The lecture capture option allowed her to watch a one-time-only series of lectures on herbal medicine delivered on campus by a guest speaker from China.

Leah served her residency at a hospital with a grant to study a rare hearing disorder. An online correspondence with doctors in Spain and Germany offered new insight into the study. Leah organized a live presentation from both doctors via the lecture capture systems at their universities, arranging for it to be shown at a nearby lecture hall. Meanwhile, a doctor in Ecuador saw the proposed abstract of the study and requested information related to patients at his clinic. All the doctors were able to send questions to one another by e-mail during the presentation and discuss the answers before the end of the conference.

When she completed her residency, Leah began work in a program in Thailand sponsored by Médecins Sans Frontières. Because she was able to take continuing education courses through her university, she signed up for a course in tropical medicine, downloading the lectures to her laptop and watching them whenever she had time in her schedule.

### What is it?

**1** *Lecture capture* is an umbrella term describing any technology that allows instructors to record what happens in their classrooms and make it available digitally. The term is used to describe a wide array of software, system capabilities, and hardware options. In its simplest form, lecture capture might be an audio recording made with an iPod. Alternatively, the term might refer to a software capture program, such as TechSmith's Camtasia Relay, that records cursor movement, typing, and other on-screen activity for demonstration purposes with an audio voiceover. At the other end of the complexity spectrum, a lecture capture system might mean a turnkey operation like Sonic Foundry's Mediasite, a webcasting platform that is frequently set up in a dedicated studio where software and hardware reside permanently to provide as-needed audio and video recordings of presentations and accompanying slides or other digital resources. While not intended as a replacement for in-class instruction, lecture capture systems offer three important benefits: an alternative when students miss class; an opportunity for content review, particularly when abstruse topics are introduced or detailed procedures are performed; and content for online course development.

### Who's doing it?

**2** Many schools are implementing these systems to provide students with greater convenience if they miss class or simply want to catch up on course content. As an additional benefit, captured lectures often form part of online or blended course development. The University of Geneva, which captured video of lectures as far back as 1970, began a program two years ago to use a lecture capture system to convert its archived holdings to new formats and generate new recordings. The system has been enthusiastically received by students because it provides more options for accessing academic content. Lecture capture systems are also popular in health and medicine programs. Michigan State University, The Johns Hopkins University, the University of North Carolina, and a number of other institutions with medical programs have been explorers in and adopters of this technology, possibly because medical training often involves demonstrations that cannot be easily repeated. In lecture capture sessions at Carleton University, students meet in classes where the lectures can be broadcast via Internet television (ITV); lectures are recorded and made available within 24 hours. One team at Carleton has devised a video mashup tool that lets students personalize lecture capture by tagging, editing, annotating, and subsequently sharing the results with their peers.

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## How does it work?

Lecture capture systems include a suite of software applications with specifications for preferred hardware, which typically consists of items such as a camera and a microphone that are available in many classrooms. The Panopto suite, for example, includes CourseCast Recorder, CourseCast Editor, and CourseCast Server. These applications integrate with audiovisual hardware to capture a lecture. Pushing a single button is enough to activate turnkey systems like Tegrity Campus and Panopto CourseCast and begin capturing a lecture. Recordings can be viewed on the web or in formats compatible with MP3 players and portable video devices.

## Why is it significant?

Lecture capture enhances and extends existing instructional activities, whether in face-to-face, fully online, or blended learning environments. It works especially well in subject areas where students benefit from repeated viewing of content, as when complex information is discussed or formulas are written on a board. The video-on-demand portion of lecture capture allows students to closely examine the steps of a demonstrated procedure or stop and go back on important actions in a science experiment. Lecture capture may enable freer thinking—students who find themselves struck by a particular comment or point can pursue that line of thought, confident that the lecture itself can be reviewed later.

Some worry that students may cut classes in favor of viewing captured lectures. Yet, from the advent of the cassette tape through the podcast, students have found that recordings take as much time to absorb as a live lecture, but without the opportunities for question-and-answer or interaction with their classmates. Moreover, instructors might add group activities during in-class times to supplement the lecture material held in archives from previous years. Recorded lectures might offer a new library of information resources and trigger changes in archiving and accessing data and new citation practices. They also offer advantages for interdisciplinary programs—a biology professor, for example, might show recorded lectures from colleagues in the physics or chemistry departments as part of the biology curriculum.

## What are the downsides?

Some question whether any pedagogical benefit emerges from replaying a lecture and covering the same ground twice. Beyond that, the practice raises a number of issues around who should have access to lectures and for how long, as well as questions of how the recordings are to be stored and what policies will govern their handling. A complicating element of lecture capture is ambiguity over who is responsible for providing the recording resources and who owns the intellectual property once the recording has been made. Using these systems for classes, conferences, and guest speakers might require a legal release, particularly when lecture capture depends on a complex infrastructure provided by the institution. Colleges and universities must also decide whether the same release applies when a professor independently captures a lecture and makes it available to students on a faculty website.

## Where is it going?

Recorded lectures could easily result in large stores of material that require new paradigms for search and archiving, including the ability for students to create personal course archives. The platform may invite mashups as developers enable ways for students to annotate a lecture itself and share the results with study groups. Such additions to captured recordings could change the character of the lecture as students annotate and reorganize what they have heard.

Institutions will need to establish copyright policies for captured lectures, arrange releases, and ensure that intellectual property rights are not left in limbo. Future lecturers might find that elements of course content become a point for contract negotiation under the heading of “courseware rights.”

## What are the implications for teaching and learning?

This technology adapts to multiple input locations so that instructors or guest speakers can present from any location that has the appropriate recording equipment. At the same time, it conforms easily to a variety of content delivery models—podcasts, mobile devices, laptops, or high-definition presentation. These systems provide convenience for students, offering remarkable flexibility with course timetables to coordinate work and study schedules. Students might even be able to take two courses scheduled at overlapping times. Emerging features in tagging and markup may draw students into intellectual discussion on a topic and encourage them to share work with others.

Lecture capture also offers new flexibility for each student’s course of study, as a single lecture could be extracted from a series and viewed separately by any student enrolled at the college or university, promoting ad hoc interdisciplinary research. An easy-to-search archive of recorded courses would thus allow a student to cross disciplines to watch a philosophy lecture on Roger Bacon, for instance, that supports a paper on the evolution of scientific thought for a course on the history of medicine. Lecture capture provides new educational opportunities—for distributed learning students as well as residential students in face-to-face or blended courses—opening up multidisciplinary programs where students can pick the best lectures from any school on any topic and assemble their own lesson plans. Faculty, on the other hand, can work with colleagues on their own campus or disparate campuses to assemble multidisciplinary courses constructed with lectures from the leading experts in the field.