

Leveraging Recorded Mini-Lectures to Increase Student Learning

By Richard Berg; Ann Brand, PhD; Jennifer Grant, PhD; John S. Kirk, PhD; and Todd Zimmerman, PhD

Creating useful and usable digital lecture materials for blended and online courses is challenging. Recording an instructor lecturing to a classroom can be difficult, and most students are not interested in watching a 50- to 90-minute recording of a lecture. And because students might not watch them, recorded classroom lectures may do little to increase student learning.

Rather than recording traditional classroom lectures, some instructors at the University of Wisconsin–Stout record mini-lectures using the multimedia program Camtasia. These videos may provide students with traditional lecture information but also offer many important advantages. They are easy for students to review and can be viewed on demand and replayed multiple times.

Dr. John S. Kirk (chemistry) uses Camtasia to create short videos covering content traditionally covered in class. He uses quizzes to gauge understanding and to encourage watching videos and reading the textbook outside class. Class time is devoted exclusively to concepts that students find difficult or interesting and on more interactive projects.

Dr. Ann Brand (education) uses Camtasia to create mini-lectures explaining the concepts that she would normally discuss in a face-to-face class. She provides links to the videos for her online students. Dr. Todd Zimmerman (physics) uses Camtasia to record short lectures for students to view before coming to class. “By moving first exposure of material out of the classroom, I can spend class time working on problems or discussing difficult

concepts. I also record short videos for students to watch before they read the text, pointing out important details to focus on and questions they should be able to answer after they have completed the reading,” he says.

Dr. Jen Grant (biology) uses Camtasia to instruct students in an online course on biotechnology. She is particularly interested in how strategic design of course content can be used to bridge the interpersonal gap between online students and their professors.

Creating mini-lectures is an easy process that can be replicated in almost any learning environment where instructors need to prepare lecture-type materials for students to view on their own. Instructors using this method at UW–Stout believe that recorded mini-lectures improve student learning.

Methodology

Although Camtasia is relatively easy to learn, some instructors benefit from training provided by the university’s Learning Technology Services (LTS). LTS has a dedicated “quiet” room for multimedia recording. This room has sound-dampening walls, a computer with Camtasia installed, and a studio-quality microphone. LTS staff are available to help instructors if they have technical or pedagogical questions.

To make recordings go smoothly, instructors are encouraged to organize their materials into logical groupings that can be recorded in short segments. For example, if a traditional lecture has five main topics or learning objects, the result may be five individual recordings. If a topic requires lengthy coverage, additional recorded mini-lectures

may be created to keep viewing times less than 15 minutes or, ideally, less than 10 minutes.

It’s useful to develop a script or outline to help focus on the content. Scripts and PowerPoint slide notes can be imported into Camtasia to create captions. Captioning is useful to students who are hearing-impaired as well as to students who wish to take notes from the mini-lectures. Camtasia also has a speech-to-text feature that can be trained to a user’s voice.

After editing, the recorded mini-lectures are produced as MP4 files. This enables them to be played on Mac, PC, and most mobile devices. This flexibility increases the likelihood that students will view the recorded mini-lectures because they have more point-of-access options.

UW–Stout uses the Desire2Learn (D2L) course management system. D2L is robust, but too many videos in an individual course shell may cause difficulty in migrating content between course shells. To prevent this, LTS uploads recorded mini-lectures to a streaming server. The instructor is then provided with a link to put in the course.

In completely online courses, there is often little sense of instructor “presence” because there is no face-to-face time. This can leave students feeling isolated from the instructor, which can lead to attrition. LTS, however, discourages Web camera use in mini-lectures. The webcam adds another element the instructor must control but provides little instructional value and, in some cases, distracts students. Instructors who wish to create more presence can work with the LTS videographer to create a

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high-quality video of the instructor introducing himself or herself and outlining the course. This gives the students a visual picture of the instructor, reinforcing the presence of the instructor when the student hears the instructor's voice narrating a recorded mini-lecture.

To gauge student reactions to the mini-lectures and their usefulness, LTS staff and instructors developed and administered an IRB-approved survey; the students completed it anonymously, which encouraged honest responses.

Results

The survey was administered to students from three STEM courses and one School of Education course. The response rate for the surveys was 38 percent (58 of 154). In the initial question, about 5 percent of students said they watched none of the recorded mini-lectures, while more than 37 percent indicated they had watched all of them.

Students felt that the mini-lectures were better than recorded full lectures. More than 79 percent of the respondents agreed or strongly agreed with the statement "The length of the audio recordings was appropriate." And more than 74 percent thought that the optimal length for a lecture was 15 minutes or less.

The mini-lecture format appealed to the vast majority of students. More than 75 percent of the students agreed or strongly agreed that the recorded mini-lectures helped reinforce their understanding of the course content, were a good supplement to the other course materials, and helped them feel confident that they understood the course materials well.

More than 80 percent of students

agreed or strongly agreed that having captions was helpful, even though none of them had self-identified as deaf or hard of hearing. Students commented that the captions made it easier to take notes, improved understanding by watching and reading, helped them learn the spellings of words, enabled them to watch the videos with the sound turned off, and enabled them to follow the videos more closely, as the captions helped focus attention.

Students also used the recorded mini-lectures to prepare for tests and exams and believed that viewing the recorded mini-lectures helped them do better on tests and exams. Seventy-three percent of students believed that viewing the recorded mini-lectures helped them get a better grade in the course.

When asked about how mini-lectures fit into the curriculum, students indicated that they did not want to have the recorded mini-lectures *instead* of face-to-face lectures. They did, however, want the recorded mini-lectures *as a supplement* to face-to-face lectures.

Respondents were able to pick multiple reasons why the recorded mini-lectures appealed to them. The ability to play them anytime, play them multiple times, and pause them to take notes were the most appealing aspects.

Discussion

A small minority of students did not find the recorded mini-lectures appealing. Some comments indicated that they preferred reading the book to viewing recorded mini-lectures. We believe that this can be attributed to different learning styles.

LTS strongly advocates the use of captions in recorded mini-lectures. If a student self-identifies as deaf or hard of hearing, captions may be required anyway. Although caption-

ing adds time to production, it prevents the need for rushed captioning after the fact.

Some instructors fear that recorded mini-lectures could be used to replace them. The evidence does not support that notion. Although the students would like recorded mini-lectures as a supplement to face-to-face lectures, they do not want them in place of face-to-face lectures.

Conclusions

A majority of students believed the videos helped them learn course content and that the videos were best kept to less than 15 minutes in length. The use of captions in the videos was deemed important for a variety of reasons, even though none of the students reported having a hearing disability.

The recorded mini-lectures seem to be popular with most students. These instructors intend to continue their use of recorded mini-lectures, and other instructors are planning to create and use them in their own courses. We believe that the recorded mini-lectures will be equally well received in other disciplines.

Dr. Ann Brand says, "Yes, the lectures improve student learning. I see it in the breadth and depth of their discussion board posts and their ability to apply the material in other written assignments."

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