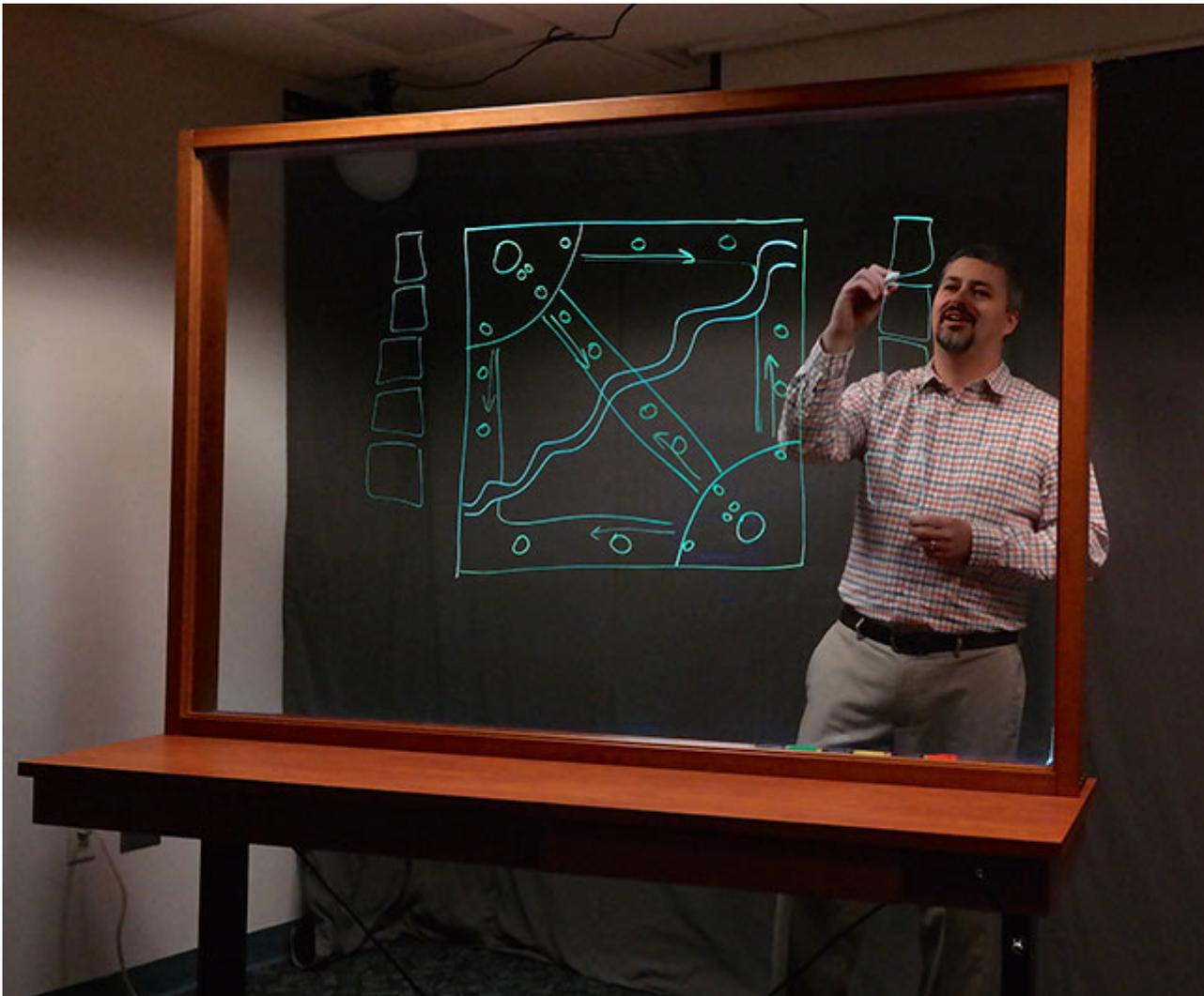# 5 Lecture Capture Hacks for More Engaging Videos

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Lightboard allows instructors to write on a "whiteboard" without turning their back to the camera. (Photo courtesy of Penn State University)

As more and more instructors flip their classrooms or teach online courses, it's become increasingly important to create videos that can hold students' attention. Some instructors have experimented with new ways to make videos more interactive and engaging; for instance, including themselves in the picture along with their teaching materials. "Putting our face on the presentation allows us to offer nuances and to communicate with more richness and immediacy," said John Lammers, professor of communication and director of the Health Communication program at the [University of Illinois at Urbana-Champaign](#).

Here are five ways to take lecture videos up a notch and better engage students.

1) Dynamic Green Screen

While it's possible to simply record a professor standing in front of a whiteboard or projection, it can be difficult for students to see the presentation material clearly. To address that problem, Penn State University recently implemented dynamic green screen technology called Chromatte from Reflecmedia in some of its One Button Studio video recording studios. Chromatte is a fabric made of tiny glass beads. It comes with a ring of LEDs that go around a camera lens, and those lights can shine green or blue light on the Chromatte to change the color of the background in a video. "It makes it possible to adapt the backdrop on the fly very quickly," said Kyle Bowen, director of Education Technology Services at Penn State. "And that makes it possible to set up these kinds of studios in smaller-sized rooms using less lighting, so it simplifies the setup of a studio."

Recording the instructor in front of the green or blue screen allows presentation materials (such as a PowerPoint presentation, image or video) to be dropped into the video digitally. The presentation material takes up the entire frame and appears as clear and crisp as the instructor footage. "It gets digitally added after the video gets created, and that results in a much higher quality video," said Bowen.

2) Virtual Green Screen

A lower-tech way to include the instructor in the video lecture uses a 3D camera mounted on the instructor's computer, much like an ordinary webcam. Personify is software that inserts a video of the instructor into a PowerPoint presentation or other online material. The instructor records himself with the 3D camera, and Personify automatically filters out the background so the instructor appears in front of the presentation material in the video, just as if he had filmed himself in front of a green screen.

While the resulting video of the instructor may not have the high production polish of one filmed in a studio in front of a green screen, it makes it possible for instructors to record video lectures anywhere, anytime — even at home. As Lammers pointed out, a key feature of strong academic content is that it's up-to-date and timely, but instructors don't have much time available to record lectures. "The instructor, especially in a research university like Illinois, really doesn't want to spend a lot of time figuring out how to put a lecture together," said Lammers. "With Personify, I can put together a 20-minute presentation that's useful to my students in about an hour."

3) Lightboard
Sometimes instructors need to record themselves writing mathematical formulas or other information on a whiteboard as they explain the concept to their students. But in a typical video production setup, part of the written material is blocked by the instructor's body, and instructors have to turn their back to the camera. Michael Peshkin, a professor of engineering at Northwestern University (IL), solved these problems by creating Lightboard.

Lightboard is an illuminated 4-by-8-foot sheet of glass. The instructor writes on the glass from behind using fluorescent markers, so the writing "glows" in front of the person. On camera, the writing appears reversed but can be digitally flipped or recorded with a mirror. "You're looking right through the board at your camera, at your students, and the writing is not obscured by you, it's in front of you," explained Peshkin. "And so that just gives you a little bit better sense of engagement with your students as you're talking, and gives them a better sense that they're being spoken to, rather than somebody just writing."

The Lightboard itself costs about $2,000 for the glass and frame, and Peshkin said he spent another $10,000 on video equipment, lighting, cameras and other recording equipment. He developed Lightboard as open source hardware, so others (including Penn State's One Button Studios) have adopted the technology and modified it to suit their own purposes.

4) Multi-Perspective Video Capture

Bloomsburg University of Pennsylvania has been using Mediasite from Sonic Foundry for several years, but last year the university implemented the platform's multi-perspective video capture tool called Mediasite MultiView, which records both the instructor and the presentation material. While Chromatte, Personify and Lightboard produce a video where the instructor and presentation materials appear in the same view, Mediasite MultiView

captures both in separate streams and allows students to view them side-by-side simultaneously or zoom in on one or the other.

"We've got a lot of faculty who like to use animations or YouTube videos during their lecture," said Asa Kelley, media technician at Bloomsburg. "MultiView can record both streams in full motion so the full integrity of the presentation is sustained for students who are reviewing it after class or experiencing it through distance learning environments."

The university has the system built into five of its classrooms, and many of the instructors are using the technology to flip their classrooms. For example, an instructor in the university's American Sign Language English Interpreting program finds the tool particularly useful because she signs in one screen while her PowerPoint slides display in the other screen, and her students can zoom in on the video of her signing to see a larger view.

5) Interactive Video

Rob Zdrojewski, an adjunct professor in Education Technologies and Emerging Media at Canisius College in Buffalo, NY, uses a free tool called eduCanon that can embed questions into online videos to create interactive lessons. As students watch a video, it pauses wherever the instructor has embedded a question, and students can't continue watching until they answer the question. Zdrojewski likes it because it supports the flipped classroom approach, so teachers can find out how well their students understood the video lecture before they come to class. "It gives the teacher insight because without it, you assign a video to watch and have no idea if the students have watched it or what they've gained from it," he said. While the free version of the tool offers a limited number of question types, a premium version is available that offers more options.

While Zdrojewski suggests eduCanon for instructors who want to test the waters of interactive video or for those on a limited budget, for those who have more money to spend and want to adopt a campuswide solution, TechSmith Relay is another option. TechSmith Relay offers built-in quizzing and analytics and includes hosted video and image management. Zdrojewski was a beta tester for TechSmith Relay, so he has experience with both tools. "Unlike eduCanon where they're just a layer on top of somebody else's video, YouTube in most cases, TechSmith Relay is an all-in-one hosting solution," he said. "The TechSmith servers hold your content. You can even pull in YouTube videos and then narrate on top of them as well, so the functionality that you're doing with eduCanon can also be done with TechSmith Relay, and all of your videos are all in one spot, where you have control over sharing them. It's definitely is the premium way to go if the school can afford to do that."

About the Author

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