# CREATING VIDEOS FOR AN ONLINE AUDIENCE
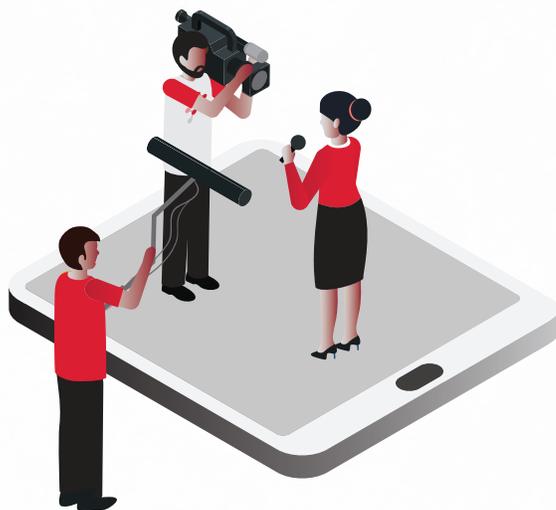
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## LEARNING THROUGH TWO MEANS

Learning can be facilitated through many means — auditory (e.g. podcasts), text (e.g. books, papers), and visual (e.g. demonstrations, diagrams). Most of the time instruction includes a mix of these means.

The world around us contains a large amount of information we can sense with sight, touch, taste, smell and hearing. However, the human mind is not able to literally store a sight, feeling, taste, smell, or sound within the person's body — a mental model or description must be created. The interconnection between visual models and verbal (written or auditory) models leads to a foundational theory in education called the dual coding theory (Paivio, 1990) whereby learners use images and verbal/textual descriptions to "encode" or store knowledge in the brain.

**In education, dual-coding opportunities are present when images are added to demonstrate text-based information, auditory components are added to describe visually-based videos, and textual information is overlaid on images or graphics. This guide specifically explores the ways to create videos (an auditory-enhanced visual learning opportunity) for online audiences.**

**AGRONOMY AND HORTICULTURE**
*Institute of Agriculture and Natural Resources*

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## VIDEO TYPE

The first step in creating a video for an online audience is to determine what information must be communicated and what visual and verbal components can be used to convey the information. Most of the time, there is not a single straightforward answer to what type of video-based instruction is best. For instance, instruction on plant diseases can be accomplished through images of disease symptoms with text-based descriptions and verbal commentary. This same goal of instruction about plant diseases could also be accomplished through having a physical specimen where the speaker physically points out features while providing verbal information. With a bit more modification of the instructional goals, an instructional video about plant diseases could be a worksite-based video with footage of the speaker, plants, landscape, and laboratory carefully spliced together and overlaid with text-based information to demonstrate the verbal descriptions of the speaker.

A very common video type is a PowerPoint-based narration of information recorded with screen capture software. Depending on the screen capture software, the computer used for recording, and the instructor's preference, these videos may or may not have video of the instructor in the screen capture recording.

A technology-enhanced room can make another type of pre-recorded video whereby viewers will see two views – a screen capture of the PowerPoint or other resources presented on the computer screen and a simultaneous video recording of the instructor presenting at the front of a classroom. This video type has a distinct advantage over the PowerPoint-based screen capture because hand gestures and other non-verbal forms of communication can be seen in the video recording of the classroom. This video type results in a product that is similar to a face-to-face lecture experience.

A worksite-based video is typically shorter in duration and relies heavily on video footage to demonstrate ideas. PowerPoint is typically not used in worksite-based videos, which results in a distinctly non-lecture viewing experience that is preferred when communicating information to public audiences.

## VIDEO PRODUCTION OPTIONS

Once you establish the type of presentation appropriate for the information and audience, you will need to find the production option that fits your needs. At the University of Nebraska–Lincoln, several means of lecture and video capture are available:

1. **Screen capture software** (see an example from Journey of a Gene)
2. **UNL's One Button studio** (see an example introduction video for Agronomy 215)
3. **Record using a technology enhanced classroom** (see an example of an Agronomy and Horticulture seminar)
4. **IANR Media or other fee-based video production service** (see an example from IANR Media)

## SCREEN CAPTURE

 The university subscribes to VidGrid. This system records what displays on your computer screen and what you say via a computer or headset microphone as you present. This option is great for PowerPoint-based presentations or presentations where you want to demonstrate the use of a program or webpage in real time, which means it can be an easy way to create digitized lectures/presentations. If you choose to use Vidgrid, it is recommended that you invest money in a headset, such as the Logitech USB Headset H390 (~$30), to help capture high-quality audio. You can activate your VidGrid account by going to vidgrid.com. To access the university's free subscription to VidGrid, you must log in to your VidGrid account with your UNL credentials through the Enterprise Login. If you need more help with VidGrid, visit VidGrid's help page or ask the AgroHort Distance Education team or other colleagues for help with the technology!

## ONE BUTTON STUDIO METHOD

 The One Button Studio on the university's city campus allows you to present information (e.g. PowerPoint presentation) on a TV screen and have yourself visible at the same time standing next to the TV screen. This resource is free, but you must reserve the room. This option is great for instances when your audience could benefit from non-verbal cues, such as hand movements. Currently, the university is piloting a feature called a "Light Board" where you can record lectures that involve extensive use of a whiteboard. The Light Board results in a video where students see you writing on a clear board in florescent-colored markers. For courses or presentations where you plan to draw or write extensively, consider experimenting with the Light Board studio as a method of recording your lectures.

## LIVE LECTURE RECORDING METHOD

 In this option, you would record one of your live, in-class lecture sessions using a technology-enhanced classroom. These technology-enhanced rooms (such as Keim 264 or Keim 150) allow you to use the cameras and microphones built into the room in conjunction with a recording software (such as VidGrid or Zoom) on the computer to record your

lectures. You will need to test trial the technology before recording your presentations. In most instances, it's advisable to record the audio, presentation slides, and the speaker, but it is also possible to live record your presentation by only capturing the audio and your presentation slides. Recoding your presentation without capturing the classroom or presenter can result in issues with accidental use of non-verbal communication that will not be available in the recording. You should also be aware that the recording will likely contain disruptive noises from students in your live classroom, the visual look of the recording may not be as "clean" because students' heads are in the recording frame or the instructor appears to be very far away, and the interactions you have with students in the live class may not apply well to your online audience.

## IANR MEDIA AND FEE-BASED VIDEO PRODUCTION

IANR Media and other fee-based video production services are typically used for videos that can be reused in many different contexts over many semesters. The video is normally recorded at the "worksite," meaning in the field, in the lab, or in the space where the work or learning of the information typically happens. Footage of the speaker, the workspace, and the items to learn about are spliced together to facilitate better understanding of information provided verbally by the speaker. Computer-generated visuals can be layered on top of the video to provide additional visualization of mathematical or diagram-based information. This production option is more costly than the previously mentioned options and thus most projects will only have a few key videos, if any, produced through these means for use in non-academic and academic use.

## WHICH METHOD IS SCIENTIFICALLY SUPPORTED?

The plethora of recording options is encouraging when it comes to finding a way to offer learning opportunities through video online, but what practice does science support? The unfortunate answer is that it's not clear yet. In a study of face-to-face students who were offered supplementary live lecture capture videos and screencast videos recorded separately from live lecture on the same topic (similar to the Vidgrid/Zoom option), the students only mildly preferred the screencast videos to live lecture recordings (Sadik, 2016). Most notably, the video quality, sound quality, video length, presentation pace, and clarity of visual elements were significantly higher rated for the screencast than the lecture capture videos. Sadik's study cannot speak to which video capture method an online instructor should use since the study dealt with supplementary lecture materials for face-to-face students, but it does suggest careful consideration of the audience's needs and the output of the video production is warranted. Ultimately, it is up to the individual instructor to decide how well their face-to-face lectures satisfy the needs of their online students. As Tony Bates, a leading writer on the topic of distance education, puts it:

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"What matters is whether classroom design meets the changing needs of a digital age. However, just adding technology to the mix, or delivering the same design online, does not automatically result in meeting changing needs. It is important then to look at the design that makes the most of the educational affordances of new technologies, because unless the design changes significantly to take full advantage of the potential of the technology, the outcome is likely to be inferior to that of the physical classroom model which it is attempting to imitate." *Teaching in a Digital Age*, Chapter 4.2

Bates, A. W. (2015). Teaching in a digital age.

Paivio, A. (1990). Mental representations: A dual coding approach (Vol. 9). Oxford University Press.

Sadik, A. (2016). Students' preferences for types of video lectures: Lecture capture vs. screencasting recordings. Journal of Educational Multimedia and Hypermedia, 25(2), 189-208.

Resources: Guidelines for Developing Presentations. https://agrohortonline.unl.edu/Guidelines_for_Developing_Presentations.pdf AgroHortOnline, Faculty Resources page

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