Educational Video Best Practices

Guidelines for Creating and Using Engaging Educational Videos
Educational Video Best Practices

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This instruction set was developed by ITaP for instructor and student use.

For comments, suggestions, correction, etc. please contact us at:

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RESOURCES FOR MAKING VIDEO AT PURDUE

Purdue offers numerous resources to aid in the production of your educational videos, depending upon your needs.

Basic Narrated PowerPoint and Screen Capture

Camtasia
Purdue has a site license for Camtasia Studio, which allows users to record, narrate and annotate PowerPoint presentations, and also to capture their computer screen. It can also create videos with clickable links, tables of contents, search, and more. Both faculty and staff may download Camtasia to their office and home computers. It is available for both Windows and Mac. For information on obtaining Camtasia Studio, see https://www.itap.purdue.edu/learning/tools/camtasia/index.html.

To access video tutorials, open Camtasia Studio and choose Help > Tutorials from the main menu. You may also access tutorials on YouTube at http://www.youtube.com/watch?v=LzoMh0sbH-A&list=PLA14CBC95384879DE

To sign up for ITaP workshops on Camtasia, visit http://www.itap.purdue.edu/training/courselisting.cfm?ID=79.

Echo Personal Capture
Echo Personal Capture integrates with the BoilerCast system and can publish links to videos straight into Blackboard Learn. It will record the computer screen, narration, and web cam video. For instructions on installing and using Echo Personal Capture, see http://www.itap.purdue.edu/learning/docs/Tips_For_Lecture_Video.pdf. Although this handout encourages manual publishing of Echo Personal Capture videos to Blackboard Learn using Kaltura, it is also possible to publish them directly into Blackboard Learn. When publishing a Personal Capture, select the course you want it to go to in Echo<sup>360</sup>. If that course is set up for Blackboard publishing, the link to the recording will appear in the BoilerCast content area of Blackboard

You may then move the video link to wherever in your course you choose.
Echo Personal Capture allows only very basic editing and does not do annotations or other advanced features. For more sophisticated editing options, create and edit your videos with Camtasia.

### Lecture Capture

The BoilerCast system (Powered by Echo\textsuperscript{360}) can do basic lecture capture (voice and computer screen) in all ITaP technology-enabled labs (TIC sites: [http://www.itap.purdue.edu/facilities/tic/locations/index.html](http://www.itap.purdue.edu/facilities/tic/locations/index.html)). In addition, several TIC sites are equipped with the Echo\textsuperscript{360} appliance, which allows rich-media capture (a video of the instructor, document camera input, etc.). For more information (including a list of TIC rooms with Echo\textsuperscript{360} Appliances), or to request recording of an entire semester of lectures or to record special events, see [http://www.itap.purdue.edu/learning/tools/boilercast/index.html](http://www.itap.purdue.edu/learning/tools/boilercast/index.html). BoilerCast lectures can be uploaded into iTunes and/or into Blackboard Learn.

The EchoCenter is one of two primary publishing options for Blackboard along with Link publishing. These options are selected by the instructor when they fill out the BoilerCast request form. The EchoCenter option adds a link to the EchoCenter (which opens within Blackboard) on the course menu. The link option publishes the videos items as links in a default Content Area called "BoilerCast", which is present in all of the courses in Blackboard Learn (see Echo Personal Capture above). Once published to the BoilerCast Content Area, the instructor can move them to other content areas if they choose too. Clicking on a recording will either launch the EchoPlayer or open a page that plays the recording in QuickTime, depending on the options selected for the recording (A. Hagen, personal communication, July 16, 2013).

### Advanced Video Production Options

If your department does not have a video production team and your needs go beyond basic screen or lecture capture, contact ITaP’s Video and Multimedia Production Services group ([http://www.itap.purdue.edu/communications/video/](http://www.itap.purdue.edu/communications/video/)). They offer services such as advanced video editing, classroom recording, script writing, storyboarding, animation, location shooting, and more. There is a charge for their services.

The Multimedia Production Services group offers training in video production (for a fee). They also offer training in Mac-based video editing software (e.g. Final Cut Pro).
TIPS

Terms

Compression: reducing the file size of a video by packing the information into a smaller space (http://desktopvideo.about.com/od/glossary/g/vidcompression.htm).

Framing: To compose a shot in the cameras viewfinder for desired content, angle and field of view (http://desktopvideo.about.com/od/glossary/g/Framing.htm).

High Definition Video: Video that is of higher resolution that standard video (http://en.wikipedia.org/wiki/High-definition_video). Generally, the packaging on a webcam or video camera will identify whether or not it is capable of producing high definition video.

General Video Quality Guidelines

The Department of Communications and Marketing at Emory University (n.d.) recommends the following:

- Video output should be well lit and should not appear dark on-screen, creating difficulty in seeing the features of the subjects in the video. For some basics of video lighting, see:
  - http://video.about.com/desktopvideo/Lighting--Three-Simple-Setups.htm

- All shots should be clearly focused and well framed. Close-ups should focus attention, not distract the viewer.

- Video output should be stable, not shaky. A tripod should be used whenever possible to reduce "camera shake." If tripod use is not possible, camera shake should be very minimal.

- All titles or other text added to the video should be proofread for accuracy and proper grammar. Misspellings, typos, and poor usage are unacceptable and will require recreating the necessary section of the video.

- Graphics and animations must be clean, clear, undistorted and fit on the screen.

- All fade in/fade outs, effects, etc. should add to the message of the video and should be smooth, not abrupt or choppy.
Educational Video Best Practices

- For videos showcasing speakers, panels, and events make a version of the video specifically for online use. For example trim down or cut out extended introductions. An online audience wants to see the main attraction. If need be include speaker bios in the written description, if uploading to YouTube.

Media College.com (n.d.) recommends using the “Rule of Thirds” - Points (or lines) of interest should occur at 1/3 or 2/3 of the way up (or across) the frame, rather than in the center. In most "people shots", the main line of interest is the line going through the eyes. In webcam video, the eyes should be approximately 1/3 of the way down the frame.

In general, good video has the following qualities (E. Dunn, personal communication, August 31, 2013):

- It is shot with a good quality high definition camera
- The script is well written
- It flows well. This is achieved through a good script and good editing (see the section Editing below).
- It has good quality audio from an external microphone
- It is well lighted
- It is suited to the topic. Video is not the solution to every instructional problem. It lends itself to the visual, so use it for visual topics.
- It is suited to the audience, to their level of understanding and to their expectations
- Feedback has been sought and considered

**Video Technical Standards**

**General Technical Guidelines**

Only use high-definition webcams to record instructor video. Remember that the quality of your presentation, including video quality, reflects on you as an instructor. In video equipment, you get what you pay for, so get the best quality web cam your budget will allow (E. Dunn, personal communication, August 31, 2013).

**For videos to be uploaded to YouTube:**

The Department of Communications and Marketing at Emory University (n.d.) recommends:
• Video Format: Preferred file types to upload to YouTube are Quicktime (.mov) and MPEG (.mp4)

• Aspect Ratio: Native aspect ratio without letterboxing (example: 16:9)

• Resolution: High Definition video at either 1280x720, 1920x1080, or higher. Video must be at least 1280x720 to be designated high definition within YouTube.

• Audio Format: MP3 or AAC preferred

• Frames per second: Native frame rate

• Aspect Ratio: The aspect ratio of the original source video should always be maintained when it's uploaded: Uploaded videos should never include letterboxing or pillarboxing bars. (Letterboxing: http://en.wikipedia.org/wiki/Letterboxing_%28filming%29, pillarboxing: https://en.wikipedia.org/wiki/Pillarbox)

• Testing: Since there is no facility to re-upload videos, it's important to test that your audio and video quality are satisfactory before you release your video publicly onto YouTube. Once a video becomes popular, the number of views, user ratings, user comments and other community data, cannot be transferred if another, higher quality version of the same video is uploaded. Make sure you get it right before you go public.

• Original Video Source: The less a video is re-encoded prior to uploading, the better the resulting YouTube video quality. We encourage you to upload your videos as close to the original source format as possible.

If you are concerned about file size, avoid creating your videos with freeware. Freeware often creates much larger files than commercial software (J. Cychosz, personal communication, July 9, 2013).

### Video Length

Research at the University of Rochester (Guo, P., 2013) established that the optimal length for online videos is six minutes or less. The author notes:

“The optimal video length is 6 minutes or shorter -- students watched most of the way through these short videos. In fact, the average engagement time of any video maxes out at 6 minutes, regardless of its length. And engagement times decrease as videos lengthen: For instance, on average students spent around 3 minutes on videos that are longer than 12 minutes, which means that they engaged with less than a quarter of the content....The take-home message for instructors is that, to maximize student engagement, they should work with instructional designers and video producers to break up their lectures into small, bite-sized pieces.”
**Audio Quality Standards**

The Department of Communications and Marketing at Emory University (n.d.) says:

- All audio should be consistently audible throughout the length of the project.
- All audio files should be clearly understandable through the length of the project.
- All audio files should be free of background noise, breaks, skips, hissing, etc.
- If there is more than one speaker, neither speaker should be noticeably louder than the other.
- Intentional background audio should be well-balanced with the primary audio.

According to E. Dunn (personal communication, August 31, 2013), you should always use an external microphone. Never use the built-in microphones in web-cams or video cameras. If you are capturing narrated PowerPoint only and do not plan to appear in the video, a good quality headset mic will be sufficient. If you wish to include webcam video of yourself in the PowerPoint presentation, a good quality Lavalier microphone (lapel mic) ([http://en.wikipedia.org/wiki/Lavalier_microphone](http://en.wikipedia.org/wiki/Lavalier_microphone)) is a good investment. A headset microphone combination looks awkward, and a gooseneck microphone that rests on a base ties you zombie-like to one position. Most instructors are accustomed to wearing lapel mics in the classroom, so this will lend an air of comfort to your speaking. As with video equipment, you get what you pay for in microphones.

**Editing**

Gretchen Siegchrist (2013, July 14) offers the following editing tips. She is careful to say that rules can be broken and often are in creative work, but these suggestions can still serve as a foundation for basic editing techniques.

- **B-Roll:** B-roll refers to video footage that sets the scene, reveals details, or generally enhances the story. For example, at a school play, besides shooting the play, you could get b-roll of the outside of the school, the program, faces of audience members, cast members hiding in the wings, or costume details. These clips can be used to cover any cuts, or smooth transitions from one scene to another.

- **Don’t use Jump Cuts:** A jump cut occurs when you have two consecutive shots with the exact same camera set up, but a difference in the subject. It happens most often when editing interviews, and you want to cut out some words or phrases that the subject says. If you leave the remaining shots side-by-side, the audience will be jarred by the slight repositioning of the subject. Instead, cover the cut with some b-roll, or use a fade.
Educational Video Best Practices

- **Stay on Your Plane:** When shooting, imagine that there is a horizontal line between you and your subjects. Now, stay on your side of the line. By observing a 180-degree plane, you keep a perspective that is more natural for the audience. If you’re editing footage that disobeys this rule, try using b-roll between cuts. This way, the change in perspective won’t be as abrupt, if it’s noticeable at all.

- **45 Degrees:** When editing together a scene shot from multiple camera angles, always try to use shots that are looking at the subject from at least a difference of 45 degrees. Otherwise, the shots are too similar and appear almost like a jump cut to the audience.

- **Cut on Motion:** Motion distracts the eye from noticing editing cuts. So, when cutting from one image to another, always try to do it when the subject is in motion. For example, cutting from a turning head to an opening door, is much smoother than cutting from a still head to a door about to be opened.

- **Cut on Wipes:** A wipe occurs when the camera lens completely fills up with one scene element (e.g. a person walks toward the camera until their jacket completely fills the frame). When the frame fills up with one element...it makes it easy to cut to a completely different scene without jarring the audience. You can set wipes up yourself during shooting, or just take advantage when they happen naturally.

- **Change Focal Lengths:** When you have two shots of the same subject, it’s easy to cut between close and wide angles. So, when shooting an interview, or a lengthy event such as a wedding, it’s a good idea to occasionally change focal lengths. A wide shot and a medium close up can be cut together, allowing you to edit parts out and change the order of shots without obvious jump cuts.

- **Cut on Similar Elements:** There’s a cut in Apocalypse Now from a rotating ceiling fan to a helicopter. The scenes change dramatically, but the visually similar elements make for a smooth, creative cut. You can do the same thing in your videos. Cut from a flower on a wedding cake to the groom’s boutonniere, or tilt up to the blue sky from one scene and then down from the sky to a different scene.

- **Match the Scene:** The beauty of editing is that you can take footage shots out of order or at separate times, and cut them together so that they appear as one continuous scene. To do this effectively, though, the elements in the shots should match up. For example, a subject who exits frame right should enter the next shot frame left. Otherwise, it appears they turned around and are walking in the other direction. Or, if the subject is holding something in one shot, don’t cut directly to a shot of them empty-handed. If you don’t have the right shots to make matched edits, insert some b-roll in between.

- **Motivate Yourself:** Ultimately, every cut should be motivated. There should be a reason that you want to switch from one shot or camera angle to another. Sometimes that motivation is a simple as, “the camera shook," or "someone walked in front of the camera..” Ideally, though, your motivations for cutting should be to advance the narrative storytelling of your video.
Teaching and Learning Tips

Active Learning Strategies with Video

Moore (2013, May 20) recommends the following techniques:

**Video as Guided Lesson**
Draw student’s attention to the most important concepts and reinforce them.

- **Pose a question at the beginning of each video** to give students an idea before they watch of what to expect, what to look for, and what might be worth thinking about.

- **Present videos in an outline-like structure** using concise, descriptively labeled links that include running times. Descriptive titles listed in outline form help students place individual videos in perspective relative to others. They also encourage active thinking before the video is even viewed. Running times are helpful for nontraditional students who must fit their studies around daily activities.

- **Use short graded or self-assessments.** These can be objective questions or discussion board posts.

**Video as springboard for in-depth discussion**
This strategy encourages students to make a personal connection between video content and their own existing knowledge. It also encourages student-student collaboration.

After viewing, have each student post to a discussion board:

- A concept that was new to them
- A concept they found confusing
- A concept that relates to the course text or a previous class discussion (and how it relates)
- Responses to the “confusing concepts” posted by other students
Video as springboard for critical thinking
The goal of this strategy is to apply concepts to new situations (transfer knowledge).

- **Have students identify, compare, and contrast the concepts presented in each video.** How are the concepts similar? How are they different? Which are substantiated or refuted by the course text (or other course materials)? Students can post to discussion boards and comment on other student’s entries.

Video as a way to strengthen online research skills while driving conceptual understanding
Have students locate additional videos that support or contradict the original video (as the instructor desires). These can be posted in Blackboard discussion groups for other students to comment on.

### Assorted Teaching Tips

Bart (2011, August 19) suggests:

- Make short videos of the learning objectives for the course. Students won’t read them if printed on a syllabus, but they come alive on video. “A lot us who have worked with curriculum design and designing courses from scratch know that learning objectives are key foundational pieces in course development so why not treat them like the key objectives they are and actually talk about them more to our students.”

- Start small and work up. Narrated PowerPoint is a good beginning. Next, use screen captures. Then, a talking head video, but with props (for an example, see [http://vimeo.com/16510245](http://vimeo.com/16510245)).

- Try just one thing at a time. Give yourself time to adjust to new techniques and technologies.

- Don’t mention dates or current events in your videos. This limits their repurposing potential.

Bart (2011, June 22) also mentions this caveat:

If you require students to make videos and submit them for grading on a public social media site, make sure that you follow your school’s Social Media Policy (Purdue’s policy is at: [http://www.purdue.edu/policies/information-technology/viic2.html](http://www.purdue.edu/policies/information-technology/viic2.html)) and clearly communicate the expectations of this policy to students.

Orlando (2011, March 23) discusses the advantages of voice (and video) feedback:

- **Improved Ability to Understand Nuance:** Students indicated that they were better able to understand the instructor’s intent. Students also indicated that instructor encouragement and emphasis were clearer.
Educational Video Best Practices

- Increased Involvement: Students felt less isolated in the online environment and were more motivated to participate when hearing their instructor’s voice.

- Increased Content Retention: Students reported that they retained audio feedback better than text feedback. Interestingly, they also reported that they retained the course content to which the feedback was related better than with text feedback. These self-reported findings were supported by the fact that students incorporated into their final projects three times as much audio feedback as text feedback.

- Increased Instructor Caring: Students interpreted the instructor as caring about them and their work more when they received audio feedback over text feedback. This difference was due to audio feedback coming across as more personal than text feedback.

He also gives the following suggestions:

- Make a short “wrap-up” video at the end of each week where the instructor posts thoughts on what s/he believes to be the most important insights from the week’s discussions.

- Make short videos to give “shout-outs” to students who made interesting points during the week.

- Do video interviews with students on their thoughts concerning the week’s discussions. Live split-screen interviews can be recorded with Camtasia along with Adobe Connect. This technique reinforces to students the belief that their views are important.

- Avoid the common mistake of looking at the keyboard rather than the camera.

- Talk to the camera like you would to a friend. “Your language will naturally become more expressive than with text comments, and looking away briefly, rolling eyes, and other facial expressions go a long way towards adding interest.”

Considerations for Filming and Delivering Lectures and Presentations

(J. Cychosz, personal communication, July 9, 2013).

- Provide print and low-bandwidth options to students. Where possible, use a delivery system that detects and adjusts to bandwidth and device considerations. For instance, Kaltura will automatically detect the viewer’s connection speed and device capabilities and deliver the optimal video format.

- Provide a transition tone (a beep or ping) during the slide transition of a filmed PowerPoint presentation to call the student’s attention to the change.
Educational Video Best Practices

- If bandwidth is a consideration (e.g. in distance classes where students may not have fast internet connections) consider compressing the video to reduce the file size. Even a small amount of compression reduces size a lot without sacrificing quality. Camtasia has numerous compression options available.

- Compression dulls the image quality a bit. If you compress the video, make sure you sharpen it a little first.

- If the instructor and computer screen are being captured separately, make sure you take in enough of the projected screen image in the instructor video to be able to coordinate the two video inputs in your editing program.

- If the instructor is being filmed with a video camera, match the filming technique to his/her teaching style.
  - E.g. If a professor writes on the chalkboard a lot and talks at the same time, shoot the video at an angle so the professor and his/her writing can both be seen.
  - E.g. If the instructor writes on the chalkboard or is at the podium a lot and also walks out into the class to engage students directly, don’t follow the professor as he/she walks out. Excessive panning becomes nauseating. Instead, either set the camera at a sweet spot that will capture the professor both at the board/lectern and also when he/she walks out, or set up two cameras and splice the film together.

- To feel at ease, it may help instructors to record narrated computer screen lectures with a laptop. They can move around and change position easier, and can sit where they are most comfortable. Recording in the location where they usually meet with students can enhance the feeling of student contact, which can show through on the video.

- Presenters should not use fancy transitions in PowerPoint slides, which may not come across as will over video. They should also avoid talking during slide transitions.

- Instructors should remember that the conventions they use for classroom lecturing will come across differently on video, and they may need to change their behavior.
  - E.g. In video, viewers may not see what instructors are pointing to with their hands or other pointing devices, and may not see laser pointers at all. Instructors need to verbally articulate the pointing (“In the upper left, you will see...”).
  - E.g. A common attention-getting technique of classroom lecturers is to peck on the chalkboard with chalk. This does not come across well on video.

- If you have never recorded a lecture outside the classroom before, film a practice lecture and have others critique it.
Educational Video Best Practices

- If you are recording a lecture outside the classroom, it might be helpful (at least in the beginning) to have a couple of volunteers playing the role of students in front of you as you record. This can enhance a feeling of connection with a student audience.

- Keep the length of a video lecture to no more than 20 minutes. This increases the likelihood that students will watch it all the way through.

Copyright

Different rules on copyright apply to videos produced for instructional purposes as opposed for those that are produced for other purposes. If there is any doubt concerning the copyright status of videos that you or others produce for your class, visit the University Copyright Office web site at http://www.lib.purdue.edu/uco/. The site contains links to sections on Copyright Basics, Copyright for Instructors, and Copyright Resources. If doubt persists, contact the University Copyright Office directly using the contact information on their web site.

Online Resources

Producing an Educational Video

This well thought-through article discusses a broad range of considerations when making instructional videos, such as

- whether video is the right solution
- instructional considerations
- Getting started
- Scriptwriting

http://edis.ifas.ufl.edu/wc024

Producing Your Own Video Program

This thorough article discusses the technical details of shooting and editing video.

http://edis.ifas.ufl.edu/wc022
Integrating video into courses

Ten ideas for using video in instruction.


FERPA and Social Media

FERPA considerations when posting video on social media sites.


Sources for Educational Videos

Lists of resources for obtaining videos for use in class.

http://www.edudemic.com/best-video-sites-for-teachers/

http://www.refseek.com/directory/educational_videos.html

Video Styles

A blog post containing information on styles of videos such as

- Screencasts and slideshows
- On-camera teacher
- Whiteboards and projectors
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http://www.knewton.com/blog/knewton/education-technology/2012/09/12/educational-video-formats-style-advice-from-knewtons-video-team/

Producing Video Interviews

http://desktopvideo.about.com/od/homevideoprojects/ht/video-interview.htm

REFERENCE LIST


Department of Communications and Marketing at Emory University, (n.d.), Video Production: Guidelines and Standards, retrieved from http://communications.emory.edu/marketing/publishing_content/


