Enhancing Instruction: Creating High-Quality Interactive Videos

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The best equipment, software, and tools to get the job done.

BY SUSAN M. ALTMeyer AND WEI FANG

Law librarians create videos for many different purposes. All types of law libraries, including county law libraries and firm libraries, use videos for on-demand training and marketing purposes. Academic libraries in particular use video for flipped classrooms and distance learning, as well as for critiquing oral arguments.

How can law librarians make these videos more effective? Two ways: (1) improve the technical quality of the videos and (2) add interactivity.
Good products start with good plans. To make a good video that will attract viewers, librarians need to choose topics carefully and thoughtfully. Consider the answer to these questions: Is this topic popular? Will it generate enough content to discuss? Do you need a visual aid to demonstrate the content?

Before the video is actually produced, discuss potential topics with your colleagues. You might get more comments or suggestions than you need, but only focus on the topics that are the most relevant.

Once you have chosen a topic and gathered the necessary materials, you can start screenwriting. Even for short instructional videos, writing a screenplay is necessary to ensure its final quality. A well-written screenplay will help you and everybody involved in the video production to better understand the scale of the production, while preventing any details from being overlooked. Screenwriting.io and johnaugust.com offer some rules for screenwriting, along with some examples. You can use simple text editors or word processing software, such as Microsoft Word or Microsoft PowerPoint, for screenwriting. The latter two offer free templates for screenwriting. Free screenwriting software is also available. Trelby, for instance, is a free multiplatform that allows you to write screenplays and import and output formatted text. Commercially available software, such as Final Draft, generally provides more features, but might not be necessary for small to medium video productions.

**Video Quality**

Improving Video Quality

With thousands of types of technical equipment available, making a video might seem easy to do on the surface. However, making a good video is a different story. The key to making a quality video is to have well-presented, well-organized content that will ultimately be well received by its viewers.

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**Video Equipment**

Videos can be produced using tools as simple as a smartphone, however, while great for portability and emergency situations, smartphones aren’t enough for other scenarios. Shaking and audio noise are the two most common factors that degrade a video’s quality. For that reason, digital point-and-shoot (compact) cameras, webcams, digital single-lens reflex (DSLR) cameras, consumer-grade digital camcorders, and professional digital camcorders are better options and are commonly used in small to medium productions.

Generally speaking, compact cameras are great for one-on-one types of video recordings, but they cannot cover a wider space. Moreover, their built-in microphones are not sufficient enough when a group of people are involved. In most cases, they are no better than a smartphone. Similarly, webcams are great for individual or small-group stationery video recordings, but the recording quality heavily relies on the computers to which they are connected.

External webcams such as Logitech C930e and Microsoft LifeCam Studio perform better than built-in cameras and can be easily upgraded. Built-in webcams work well, but they tend to create more electrical noise than the external options.

DSLR cameras, such as Canon EOS 5D Mark IV and 7D Mark II, on the other hand, are solid platforms for video productions in a library environment. Furthermore, they are compatible with thousands of accessories that would increase a video production’s quality. For instance, when shooting a scene involving two people, a 50 mm fixed focal length lens can be used to create background blur that focuses more on the people. When shooting from a distance, a 200 mm lens can be used to capture objects from far away. In addition, DSLRs come with
Audio Equipment

Audio is as important as video when making instructional videos. When recording audio, the option is to use whatever is built into the video device. Take webcams, for example. Laptops with built-in webcams have built-in microphones as well. Most external webcams also come with built-in microphones. However, those microphones only work well when recording individuals or very small groups. Larger groups (such as 20 students) would require additional microphones, mixers, and digital audio recorders. External microphones, when combined with a digital audio recorder, would require sharper audio than internal microphones provide due to the fact that external microphones would not pick up internal laptop noise generated by hard drives or circuits. When purchasing microphones, avoid 3.5 mm stereo microphones and choose microphones with XLR connectors. The latter costs more but produces higher quality sound than the 3.5 mm, as XLR connectors are balanced to reduce possible audio lost, especially over long distances (more than 10 feet). External microphones can be sorted into three basic categories based on their sensitivities: unidirectional, bidirectional, and omnidirectional. Unidirectional is ideal for podcast-like recordings, where one speaker is talking into the microphone. A bidirectional microphone is ideal for face-to-face interview recordings, and an omnidirectional microphone is ideal for conference or classroom recordings.

Pick the Right Video/Audio Equipment

With Budget in Mind

Cell phones, webcams, and compact cameras can be used when individuals or small groups are the subjects of a video recording. When using a cell phone as the video recording device, it should be mounted on a gimbal stabilizer, such as a DJI Osmo Mobile Gimbal; a Sony HDR-CX405 would be a good alternative since it is a good consumer-grade camcorder for general purposes and produces quality videos. This camera could be mounted on a Benro Aero 2 video tripod with video head kit. The total cost would be less than $800 and it would produce quality HD videos in an MP4 format. If audio quality is a concern, Shure VP83 would be a good 3.5 mm stereo microphone you could use with the camcorder, and Blue Snowball iCE could be used with webcams or laptops.

With Quality in Mind

Canon XF100 is an entry-level professional camcorder that provides very good recording quality with a reasonable price tag. Alternatively, Canon EOS 5D Mark IV with Canon EF 24-105mm f/4L IS II lens would be an excellent platform to produce high-quality video in normal lighting conditions. The camcorder or the camera can be mounted on a Gitzo G2180 fluid head and Oben CT-2491 carbon fiber tripod for maximum flexibility. Off-camera DVR/monitors, such as Atomos Ninja Blade, can be used for better quality video since it utilizes a high-quality codec. For recordings of individuals or interviews, wireless microphones, such as the Sennheiser ew 112 G3, should be used. Shure
X2u and Shure MV: can be used as an XLR-to-USB interface when doing desktop recordings. When recording a large group of people, multiple XLR microphones should be deployed and connected to a digital audio recorder that has a built-in mixer and provides phantom power required by XLR microphones. A good example would be the Tascam DR-70D 4-channel audio recorder. It connects up to four microphones and uses a timecode to synchronize the audio with the video. When a screen capture is needed, in addition to software-based screen capturing solutions, Epiphan DV12USB can provide a hardware-based DVI/ VGA/HDMI-to-USB interface that produces high-quality video.

**Editing Software and Codecs**

After video and audio recordings are finished, Adobe Premiere Pro and Apple Final Cut Pro X can be used to edit the recordings and generate the final video clips. However, their learning curve is high and they require high-performance computers to fully utilize their features. Alternatively, Apple iMovie and Microsoft Windows Movie Maker are also good choices and are much easier to use.

After video clips are created, they can be converted into different formats. FFMPEG is a free yet very powerful tool that allows users to convert video and audio using different codecs; however, it requires some learning. Format Factory, which is based on FFMPEG, provides a friendly interface that is easy to use and is free, but is ad supported. For most video clips to be viewed online, MP4 format is a good choice, with the video encoded using H.264 codec and the audio encoded using AAC codec.

**Adding Interactivity**

Interactivity makes videos more engaging and personalized. For example, librarians can embed questions into a video and see how viewers answered (using PlayPosit, EdPuzzle, or Office Mix). The embedded questions can be used as learning assessments or as an opinion survey. Online discussion boards can be created, possibly keyed to points in the video timeline (using Ted-Ed, Vialogues, or VideoAnt). Finally, whiteboard apps can create screen capture recordings of a document being marked up. For example, Explain Everything and ShowMe whiteboard apps allow collaboration between teachers and students.

**Comparing Free/Low Cost Interactivity Software**

**Free Software for Embedding Questions**

PlayPosit, EdPuzzle, and Office Mix can be used to embed questions into a video. PlayPosit and EdPuzzle allow a librarian to use a video on YouTube, Vimeo, and certain other websites—even if someone else created the video. The video streams from YouTube or another source, alleviating copyright concerns, but if the video is removed from YouTube, no copy is stored. EdPuzzle also allows videos to be uploaded from a user’s computer.

Office Mix works a bit differently. The user starts with a PowerPoint slideshow and embeds interactive questions and web demos into the slides. Then, the user records over the slides with a voiceover. While recording the voiceover, the user can draw on the slides with different colored pens. Office Mix is a PowerPoint add-in; once downloaded, it is accessible from the PowerPoint ribbon in PowerPoint 2013 or Office365. Office Mix has the option to limit access to only those in the organization (via Office365), while the free versions of PlayPosit and EdPuzzle do not have this privacy option.

PlayPosit, EdPuzzle, and Office Mix all provide the viewer with immediate feedback. These services also allow the librarian to see viewer responses to questions. Office Mix can be set to allow a limited number of attempts to...
answer. PlayPosit only allows a student to answer the questions once, but there is a box where the student can write a correction. The instructor can reset a student’s score or a student could create another account to retake the lesson. Similarly, EdPuzzle only allows a student to answer once, but the student could create a new account to retake the lesson.

Along the same lines, PlayPosit only allows a viewer to fast forward to the furthest they have reached within the video. EdPuzzle lets the creator decide whether or not the viewer can fast forward the video. PlayPosit users can also select whether viewers are able to rewind when a question pops up.

PlayPosit, EdPuzzle, and Office Mix can be used for cropping the recording at the beginning and end. One of EdPuzzle’s unique features is the ability to replace the soundtrack, say, with a translation. EdPuzzle users can also splice in audio notes at various points in the video.

In short, if a librarian wants to edit and embed questions into an already existing video, they should choose EdPuzzle or PlayPosit. If a librarian wants to record a PowerPoint presentation with web demos and embedded questions, Office Mix is the best bet. Office Mix has the best capabilities for privacy, while PlayPosit and EdPuzzle can prevent the viewer from fast forwarding. EdPuzzle also contains bonus features such as voiceovers and video notes.

Free Video Annotation and Discussion

Vialogues and VideoAnt allow people to make comments tied to points in the video timeline. With Vialogues, the librarian can insert discussion questions, multiple choice questions, or polls at certain points in the video timeline and see the viewers’ answers on the back end. VideoAnt does not have a multiple-choice question or poll feature. Only text discussion can be added and keyed to the video timeline in VideoAnt. Further, VideoAnt can only stream a video from YouTube. Vialogues, however, can stream from YouTube or Vimeo, or a video can be uploaded. If privacy is desired while using VideoAnt, the YouTube video can be set as “unlisted,” and access can be limited to those who have the URL. The instructor can also grant permission to annotate a VideoAnt or change permission to “view only.” If you are looking to critique student arguments, Vialogues might not be as useful since anyone can see Vialogues. That said, the instructor could require “moderator permission” in order to join the Vialogues discussion.

Ted-Ed can also create an online interactive discussion of a video, but instead of using comments keyed to the video timeline, Ted-Ed allows creation of a lesson with four parts, titled:

- "Watch" (a video)
- "Think" (multiple choice questions)
- "Dig Deeper" (links for more information)
- "Discuss" (discussion board)

A Ted-Ed lesson can include all four parts or just selected ones. The teacher can see student responses to the multiple-choice questions on the back end, and the discussion board can be viewed by anyone. The only privacy settings available control whether the Ted-Ed lesson is discoverable by the Ted-Ed community or not. Ted-Ed provides an interesting format for an online lesson but would not be as useful as VideoAnt for critiquing a student presentation.

Whiteboard Apps

Whiteboard apps create screen capture recordings of the instructor talking and writing on a board. Similarly, Explain Everything is a low-cost whiteboard app that offers a lot of features. Documents are uploaded to Explain Everything, and a separate slide is created for each page of the document. The instructor can scroll down the document page while marking it up. Text and images can be added, and the instructor can go to a website during the screen recording. Students and teachers can also collaborate on editing a document. The videos created can be set as private, unlisted, or public. While one can view recordings on any device, an Explain Everything video can only be created using iOS devices, Android, or Windows 8.1 or 10.

ShowMe is another whiteboard app. ShowMe can create videos on iOS devices (iPad and iPhone) only, but the videos can be viewed from any device. However, the free version of ShowMe does not have as many features as Explain Everything. For example, the free version of ShowMe does not allow private postings.

Making a Connection

Librarians spend a lot of time creating videos for instruction, marketing, and other purposes. Creating better-quality videos and adding interactivity can help ensure that patrons are actually watching the videos and receiving the messages.

**AALL2go EXTRA**

Watch the “Creating Interactive Videos to Enhance Instruction” webinar at bit.ly/AALL2gcVideo.

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