

**LIBRARY OF CONGRESS  
COPYRIGHT OFFICE**

In the Matter of

Exemptions to Permit  
Circumvention of Access Controls  
on Copyrighted Works

Docket No. 2017–10

DVD COPY CONTROL ASSOCIATION (“DVD CCA”) AND  
THE ADVANCED ACCESS CONTENT SYSTEM LICENSING  
ADMINISTRATOR’S (“AACSLA”) JOINT RESPONSE TO POSTHEARING  
QUESTION FOR CLASS 1 (AUDIOVISUAL WORKS - CRITICISM AND COMMENT)

**Question:**

At the hearings, participants gave multiple presentations on whether screen capture is or is not a sufficient alternative to circumvention. Based on these presentations, the Office is interested in understanding whether screen capture is a sufficient alternative to circumvention for educational uses of "short portions of the motion pictures" beyond film studies or other courses requiring close analysis of film and media excerpts. Please provide illustrative examples of whether screen capture is or is not a sufficient alternative to circumvention for use of "short portions of the motion pictures," for educational purposes. In responding, please consider or reference any specific needs of current exemption beneficiaries, such as university faculty and students; faculty of massive open online courses; kindergarten through twelfth-grade educators, including of accredited general educational development (GED) programs; and/or educators and participants in nonprofit digital and media literacy programs offered by libraries, museums and other nonprofit entities with an educational mission, in the course of face-to-face instructional activities.

**Response:**

In support of the position that screen capture is an alternative to circumvention for use of “short portions of the motion pictures,” for educational purposes, DVD CCA and AACSLA provide

- the statement of an educator cited by the Joint Educators,
- a more detailed explanation of their argument that screen capture is more practical for educators than circumvention is, and
- a more complete review of the article previously cited in their joint opposition - *Screencasting to Engage Learning*.

## **Professor Knill's Use of Screen Capture**

The Joint Educators' own examples of use of audiovisual works for educational purposes likely involve the use of screen capture. The Joint Educators pointed to the work of Professor Oliver Knill of the Harvard University Department of Mathematics, who created a webpage entitled "MathMovies," which includes clips illustrating the role of math in some popular audiovisual works. While Joint Educators maintain that these clips came from YouTube, the professor likely made them with screen capture.

On January 4, 2018, counsel to DVD CCA and AACCS LA asked Professor Knill whether "[he] rip[ped] them from DVD or did [he] use some particular screen capture? If the latter, which one?" Professor Knill responded with the following:

ishow you is a good tool <https://shinywhitebox.com/ishowu> for small clips like my collection for educational purposes. It works well for short clips while watching a DVD or blueray. Also the low quality (especially frame rate wise) helps to comply with fair use practices (it should never harm the content creator). I often then use "final cut" to adjust.

When Professor Knill writes "ishow you," he means iShowU, which is screen capture software. According to Professor Knill, this screen capture software is "a good tool . . . for small clips . . . for educational purposes."

## **Use of Screen Capture Is Easier Than Circumvention**

DVD CCA and AACCS LA have maintained that screen capture software is easier to learn and use than to actually circumvent the disc and copy it, which can be achieved with software such as *Handbrake*. This simplicity makes it a more practical tool for educators.

The obvious difference between screen capture and circumvention is that screen capture software does not involve decrypting the DVD. Its functionality is limited to recording the video output and rendering the recording to a viewable file format (e.g., MP4). The recording functionality is very straightforward. While observing the playback of a DVD, the software permits an educator to start and stop recording at the exact points that the educator wants based on what the educator views in the course of playing back the DVD. The screen capture software then renders the recording into a viewable clip.

In contrast, if the educator pursues an approach involving circumvention, the educator must go through several steps in order to obtain the desired clip. In order to copy the work from a DVD or Blu-ray disc, the content on the DVD or Blu-ray disc must be decrypted first. That requires an initial understanding of which element of the content the educator wishes to use, whether from the main title or one of what are normally multiple forms of "bonus" content. Then, before the Handbrake program can be applied to copy the selected portion, the entire disc must be decrypted and stored (and usually the content must be transcoded into a revised encoding system in order to avoid having the

file become too huge to be manageable). Even when the content is decrypted, the user must apply Handbrake only to that element (main title/bonus content) desired to be copied. Our experience is that if the user attempts to simply apply Handbrake to the entire copied content, *Handbrake* is almost certain to crash.

To be clear, *Handbrake* itself does not include decryption functionality. Rather, an educator must add some form of decryption circumvention first. *Handbrake* itself is a form of encoder software, regularly used to convert from one format to another for the purposes of standardization, speed or compression. For these purposes, the encoder software is desirable to reduce the native file size of the work on the DVD to facilitate transfer or distribution purposes.

At this point the educator, who only wants to use short portions of the work, must import the transcoded file into a video editing program such as *Final Cut* to create the desired clips.

When comparing the circumvention process with the screen capture alternative, it seems likely that very few educators would voluntarily embark on circumvention when screen capture software provides a simpler and quicker solution, unless they absolutely need the higher quality that circumvention can provide. At this stage, with screen capture software improving significantly in its ability to produce a quality image, even those educators who may have previously needed to circumvent for the purpose of achieving high quality recordings necessary for the specific education purposes, will likely find screen capture a more attractive alternative.

### ***Review of Screencasting to Engage Learning***

As DVD CCA and AACS LA discussed in their opposition screencasting (the use of screen capture) is a pedagogical tool that more educators are adapting. The article, *Screencasting to Engage Learning*, already cited in the opposition,<sup>1</sup> explains:

Screencasting can be integrated across the curriculum and into many learning activities. Screencasts are an effective instructional format that can be used for tutorials, demonstrations, digital storytelling, and narrated PowerPoint presentations.

...

[M]any teachers from K–12 and higher education use screencasting as an online or stand-alone teaching tool with traditional teaching approaches to enhance and engage the learning experience of their students. Sugar, Brown, and Luterbach noted that screencasting as an instructional strategy may be viewed as a modern descendent of instructional film and video.<sup>2</sup>

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<sup>1</sup> DVD CCA and AACS LA Joint Opposition to Class 1 at 37.

<sup>2</sup> Ruffini, Michael, *Screencasting to Engage Learning*, EDUCAUSE Review (Oct. 31, 2012) available at <https://er.educause.edu/articles/2012/11/screencasting-to-engage-learning> (last visited May 31, 2018). The article also provides some information of screen capture software

The article notes that screencasting is central to online education, specifically what has become known as MOOCs.<sup>3</sup>

Screencasting has emerged as a prominent teaching tool on the Internet. . . . For the teacher a screencast is an efficient and effective means of describing a step-by-step process, explaining a particular concept, or presenting a PowerPoint presentation with narration. Teachers have the ability to craft succinct and concise presentations because each screencast can be edited. The inclusion of video-based instruction in online environments, such as screencasting, can have positive effects on student learning and can be pedagogically equivalent to their face-to-face instruction counterparts.

. . . [S]tudents can watch a screencast video anytime, anywhere and have complete control of the lesson, which means they review any part of the presentation as needed. Screencasts can be delivered via streaming or downloaded in their entirety for later viewing.

The ability to pause or review content also gives students the option to move at their own pace, which is not always feasible in the classroom.<sup>4</sup>

Finally, the article also notes that audiovisual works can be incorporated into screencasting. “During the video editing process a variety of media can be imported into a screencast project, such as video clips, photos, music, and animations. Screencasting is a multimedia alternative to video recording, is easy to use, and helps fill a need for dynamic, engaging content.”<sup>5</sup> Undoubtedly, using screen capture to produce clips will grow as more educators adopt screencasting as a pedagogical tool.

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popular in 2019, including several identified in past proceedings and the iShowU, identified by Professor Knill.

<sup>3</sup> The article identified *Khan Academy* as providing “student access to many educational screencast videos on the Internet.” Ruffini, *supra* note 2.

<sup>4</sup> *Id.*

<sup>5</sup> Ruffini, *supra* note 2.

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Respectfully submitted,

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