# *Screencasting:*
## *Using screen capture videos to enhance learning*

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The explosion of technology and software affords many resources for educators and administrators. Yet, keeping up with the software training and implementation can be difficult. Although many teachers take advantage of wireless laptop classroom carts and computer labs, they many not have basic knowledge of applications to troubleshoot technical problems for students. Also, the range of computer literacy in students is just as varied as their learning abilities. To reduce frustration and encourage teacher and student use of technology, administrators and teachers need training and practice.

Screencasting is the technique used to create computer screen videos that demonstrate how to use applications. Yet, the process and ease of use make screencasting a useful tool for much more, including digital storytelling and think-aloud for strategies or problem solving. Screencasting can make the time teachers use computers with students more constructive and efficient. For example, a teacher can create a "how-to" video on using Microsoft Word paragraph indent tools to set MLA formatting in a research paper. This leaves more time for teachers to answer content- not technology-related questions. In addition, language arts teachers can create a screencast video of how a paper is edited and graded against a rubric or how to critically read a text. Because screencast videos can be stored online or in a portable DVD format, students have repeated access to the videos, helping them self-regulate their learning, and teachers can use them as a resource for small group instruction to differentiate learning. Screencasting can also be used as an assessment tool where students can demonstrate mastery of how they organize, edit or draft an assignment. Screencast videos are self-paced resources that allow the user to pause, repeat, or fast-forward. Providing flexibility and productivity, screencasting is easy to learn and implement.

**Related costs and licensing issues**

There is a variety of free software for screencasting, as well as free web sites that will host the files. Intermediate and professional video editing software can be purchased to enhance the quality of the screencast. A single license for software costs between $20-550. The system requirements of the software can range from 1.0-3.0GHz processors, 75-200MB of free disk space, and 500MB – 2G RAM. The software can operate more efficiently with a higher the processor and RAM memory. The disk space is required to install the software because it runs on the computer not over the Internet or from a CD. The audio portion of the screencast can be recorded using the computer's microphone; however, it is recommended that a plug-in microphone be used for clarity. Microphone costs are $10-70, depending on the features you want (i.e. basic recording or professional sound).

Distribution of the screencasts can occur via streaming video or a download file from an online storage location. For example, an online provider, such as Screencast.com, offers 2GB of free storage space and bandwidth for screencast videos. For a nominal, monthly fee of $9.95, users have access to 25GB of storage and 200GB of bandwidth. The higher bandwidth allows for a smoother stream for the video. If the intended audience has a dial-up versus cable modem, the streaming video can take much longer to run online or to download. To avoid the dependency of using the Internet to view the screencast, users can create CD/DVD versions of the file for viewing. To create the portable versions, the user's computer must be equipped with a CD/DVD-writer drive; blank CD/DVDs range in cost, from $5-35, based on the quantity and brand purchased. Although the user can create closed captions for the video, the computer that the audience uses should have a sound card.

**Environmental factors to consider**

When implementing screencasting in the classroom, educators should be prepared to answer related technical questions beyond the screencast. For example, a novice computer user may not know how to make text bold for the title on their research paper; the screencast mentioned above only covered paragraph formatting. Headphones should be provided to reduce distraction. The online storage location must be operable, and students must have access to the Internet if the screencast file is stored as an online, streaming video. The computer lab assistant should be informed of the screencast use to adequately test and prepare the wireless laptop carts or the computer lab. Although screencast videos can provide one-on-one instruction, teachers should make note of similar questions that arise from the same video to review and edit the video for future use. Also teachers should ensure that homebound students who use the screencast videos for instruction have the required computer functions (i.e. access to Internet or CD/DVD drive and sound card).

Before creating the screencast, educators should research screencast forums and online tutorials. Several companies, such as Atomic Learning, have existing online screencast computer software tutorials available; however, the fee range for use is $60-100, depending on the number of users or the number of screencasts available. Some school districts purchase licenses for these screencasts, and teachers may already have access. Many online forums are free, but you may need to create a membership using an e-mail address to view the library of screencasts.

Finally, an important factor to consider when creating screencasts is compatible software. If the version of the software you are using in the screencast differs from the audience, the person viewing the screencast may be confused or feel that he/she cannot perform the function because the software is not the same.

**How to create a screencast**

Screencasts can be made by capturing still photos of a computer screen and importing them into video software, such as iMovie or MovieMaker. However, there are many more software applications that allow a video to record the movements on the computer screen to perform a function (i.e. how to cut and paste text in a word processing software); this whitepaper focuses on screencasts created in this manner. The key to a successful screencast is planning. Before recording the video, it is helpful to create storyboards or a script to focus the screencast and reduce editing. Consider the purpose of the screencast to determine the necessary length. Organize the steps into related chunks, and consider creating more than one screencast to reduce file size. Use a clear, conversational tone, rather than the formal tone of a lecture. Practice the steps or function you wish to screencast before recording to ensure a smoother transition. While you can record the narration at the same time you perform the steps, it is more difficult to edit the video and have smooth audio narration if they are created simultaneously.

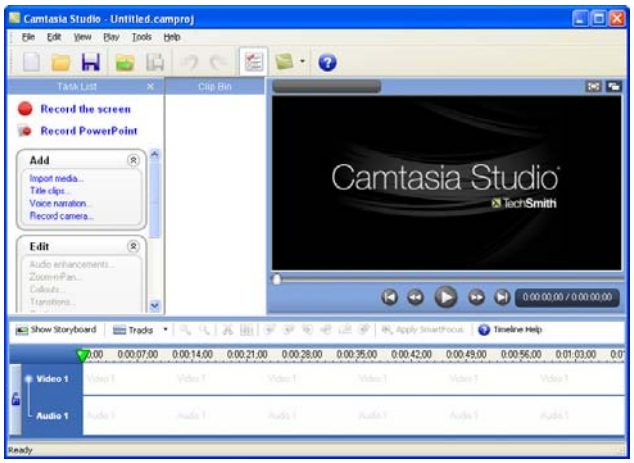


Figure 1

To begin a screencast, open up the capturing software, such as Camstasia or DemoCreator. No matter how advanced the software, the capturing function is similar. Each application has a red record button (Fig. 1). Once the record button is pressed, each movement you perform on the computer screen is recorded. Based on the screencasting program used, a record menu may appear on the screen or in the toolbar that allows you to pause or stop the recording


Figure 2

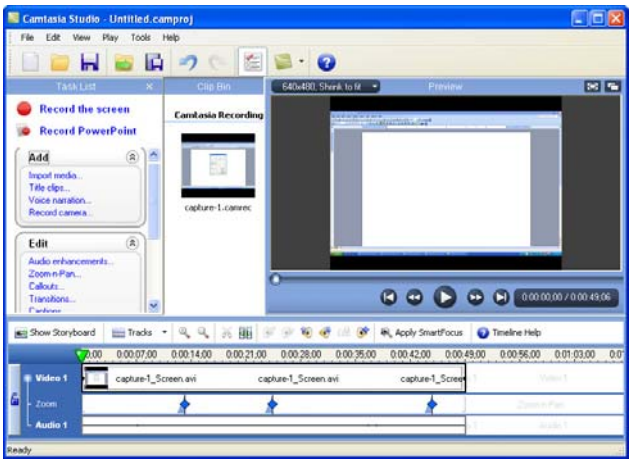


Figure 3

once you complete the steps for the screencast (Fig. 2). Once the video is recorded, the project is brought into the video software to be edited. Within the main project menu, you can preview the existing video, add audio, or add additional effects, such as a title slide or credits to the screencast (Fig. 3). Once the editing is complete, the project file is ready for rendering, or to save in a format that can be viewed. Some video editing applications provide file options for exporting, such as .avi or .mov. These file types determine which software displays the video, and the audience needs to have access to those viewing programs (i.e. Windows Media Player or Apple Quicktime). The screencast software can also provide options for viewing. Higher resolution or speed can require a larger file size; for example, the file output could be viewed in 16 frames per second at 640x480 screen resolution. Because most screencast videos are viewed through streaming downloads from a web site, a smaller file is recommended. The free, online storage locations can also limit file sizes to 100MB or less. Using narration and limited effects, a 3-minute screencast video could export as large as 25MB.

**Addressing National Educational Technology Standards (NETS)**

The process of creating and using screencasting addresses several NETS standards for students and teachers. This process involves student standards 1, 3, and 6. Because screencasting can be used to record video on how the computer is used, students craft their screencast using creativity and innovation. They can create original products that demonstrate mastery of an application or outline their thinking process when constructing a project. These screencasts can be used as models for other students as well. Regarding research and information fluency, students can create digital reference cards for research projects or create screencasts of how they authenticate a source for a project, showing the teacher and other peers how the source is valid and what information was gathered. For one-on-one tutoring, students can draft screencasts on how to perform a function in a word processing application, or the teacher can assign the screencast for the student to then create the file based on the information in the video. The student can submit the completed file as an assessment.

For teachers and administrators, the process of screencasting addresses the NETS standards 1-4. To facilitate and inspire student learning and creativity, a teacher could create screencast videos as a think aloud strategy, modeling how he/she problem-solved an inference question and found the supporting text for the answer. Using screencasts enhances the digital learning environment because the teacher is creating a digital resource associated with other applications or student learning. These screencasts can be used by students throughout the semester to refresh a process or to re-learn content. For teachers and administrators, screencasts can enhance professional development and effective communication to parents/guardians. If a teacher has conflicting meetings on an in-service day, he/she can access the screencast to train at

a later time or to refresh skills before a technology assessment. If a parent is unavailable for a conference or the teacher is unavailable for an IEP meeting, the teacher could create a screencast of how the student's work is graded and the rationale used. As mentioned earlier, screencasts aid students with self-regulated learning. Having frequent access to a resource can also improve self-efficacy.

**Sample uses for screencasting**

| Students | Teachers | Administrators |
|---|---|---|
| • Peer-edit writing for students in another course/block<br>• Perform assessments for technology use or a content strategy that utilizes technology.<br>• Work with counselors to create digital portfolio references for college applications | • Create "how-to" references for formatting papers or using word processing for assignments<br>• Create think aloud screencasts showing how to find text support for constructed-responses.<br>• Generate a screencast for associated lecture with Promethean Activ flipchart notes or a PowerPoint presentation for absent or homebound students. | • Generate in-service training on new technology (i.e. TestView or new Web format requirements for teacher Internet pages)<br>• Assess teacher levels of technology proficiency to recommend training<br>• Have technology assistants create "right-now" references for common technology issues or to troubleshoot a minor problem |

**Related benefits and drawbacks for screencasting**

As with any technology or innovative use of technology, users should be aware of the possible advantages and disadvantages for screencasting. When implementing screencasting as a resource or assessment, educators should follow the rule "just because you can, doesn't mean you should"; in other words, music or other audio files can accompany the narration, as well as added graphics, transitions and video effects. However, the purpose of the screencast can get lost in the final product if too many of these are used. The novelty of the technique should be considered when teachers plan long-term use for instruction and/or assessment. The list below reflects an overview of considerations.

| Benefits | Drawbacks |
|---|---|
| • Learning how to screencast is quick and relatively easy.<br>• Free software and storage locations are available.<br>• Teachers can link to existing screencasts or participate in forums to enhance their skills.<br>• Lessons are self-paced, using one-on-one instruction.<br>• Unlike a podcast, or audio file, the audience sees the steps to perform a task while listening to narration, instead of following a list of written steps.<br>• Screencasting video can be paused and repeated while the audience performs the steps.<br>• Different options for viewing and storing the | • Screencasting is not interactive; the audience cannot ask the video or the recorded audio questions like a technology help desk.<br>• Screencasts should be reviewed and updated often to reflect newer versions of technology or to edit recurring problems (i.e. many students have difficulty performing the steps because something may be missing).<br>• Teachers should consider the time involved to view the screencast and perform the task when planning lessons; teachers should also be aware of the home access to the Internet or other technology.<br>• When creating a screencast, there is no input from the audience, and the audience cannot see the creator's expressions when viewing. |

| | |
|---|---|
| file are available, such as streaming video or DVD. | One can only hear the narration.<br>• People who are more familiar with the technology can create incoherent screencasts for a novice user.<br>• Rendering a file to export can take up to several minutes depending on the speed of the computer and the file size. No other function can be done on the computer while the file renders. |

**Conclusion**

Screencasting is an effective tool to enhance learning. Teachers can create screencasts to supplement and support instruction for content standards that are a progression of previous year (i.e. learning literary devices begins in third grade). These one-to-one lessons can provide students with needed resources while promoting self-regulated learning. Students can also work collaboratively on projects for subjects without needing full group attendance. Administrators can seek adequate training and implement technology strategies more effectively. Screencasts can be an effective and engaging tool to encourage teacher and student use of technology in the classroom.

**Other useful resources about screencasting**

www.myscreencast.com and www.screencastcentral.com – open source forums for screencasting

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