

# *VIDEO FOR THE 21ST CENTURY*

*ENRICHING CORE COURSES AND  
IMPROVING STUDENT ENGAGEMENT  
WITH DIGITAL VIDEO PRODUCTION*



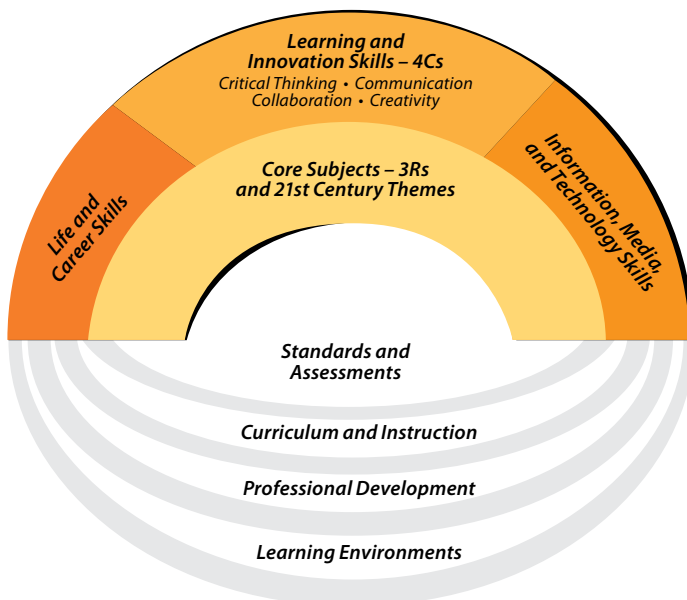
## INTRODUCTION

Kids today spend their lives outside school surrounded by video — whether on their TV screens, tablet PCs, laptops or smartphones. Too often, the video stream shuts off inside the classroom doors. But if students are given access to video tools in core classes — especially tools that allow them to produce their own videos — they are not only more engaged in their coursework, but learn valuable 21st-century skills.

On average, one-third of high schoolers today don't graduate; the number is 50 percent or higher for African-Americans and Hispanics.<sup>1</sup> Studies show that one key contributor is lack of engagement: Students don't like school and report being bored. According to the 2010 High School Survey of Student Engagement, 55 percent of students said projects involving technology would help them feel more interested in school (49 percent said art and drama would help; 60 percent said group projects).<sup>2</sup> Creating video in the classroom often taps all of these interests.

Video technology can also help foster vital skills needed for the 21st century. The 21st Century Framework (see graphic below), developed by the Partnership for 21st Century Skills, sets forth standards for student achievement to ensure success in today's technological world. The framework includes skills that are reinforced by student video creation such as creativity, communication and media mastery.<sup>3</sup>

### 21st Century Student Outcomes and Support Systems



Core subject knowledge can also be strengthened through the use of student-created video. This is especially important in an age of Common Core State Standards — a framework of core standards for K-12 students developed by the National Governors Association Center for Best Practices and the Council of Chief State School Officers. More than half of U.S. states have adopted these standards, which embrace not only specific content knowledge, but also the use of media and technology.

## HOW BEST TO USE MEDIA TECHNOLOGY IN CORE CLASSES

Glen Bull co-directs the Center for Technology & Teacher Education, is a professor of instructional technology at the University of Virginia and co-authored "Teaching With Digital Video: Watch, Analyze, Create."

At present, research doesn't show an overwhelming cause-and-effect relationship between teaching with student-made video and increased test scores or grades, says Bull. However, some research is showing indications of a positive correlation between learning and student engagement.

For instance, Bull and other researchers compared students who wrote a historical essay in class with students who made a two-minute documentary, and found a large percentage of the filmmakers were "much more engaged" than essay writers



and spent more time with those projects. Bull can't say whether the video-making subjects outperformed the essay writers. "We don't have conclusive results because our sample size wasn't large enough and not sufficiently controlled ... but it appears that kids who were more engaged did better."

The key to effective video-making in the classroom, says Bull, is a well-trained teacher who understands how to combine content knowledge, pedagogy and technology. Successful teachers understand how students can best master specific content areas, and how to use technological tools to achieve this mastery. Using video technology isn't simply a matter of plunking cameras and computers into a classroom — there needs to be an understanding of each core discipline's unique features and how digital video can best enhance them. Below are some ways that digital video can benefit core subjects:

### Science

Videos can be used to film live demonstrations that are potentially hazardous if performed with a large class; two or three students can run an experiment under a teacher's close supervision, then show what they did via video to the rest of the class.

Another way video can be used in science classes is to capture phenomena that are too slow, fast or small to appreciate with the naked eye. Students often use time-lapse photography to

monitor a plant's growth. Video cameras can be attached to microscopes to view an amoeba moving in a drop of water.

### Social Studies

Videos can capture primary sources too often left out of today's textbooks, but available online. These can be incorporated into student documentaries, along with photos, maps and video and audio clips.

### Math

Too often, math is taught in the abstract and is "out of context," says Bull. Many students have a hard time applying math in their lives and turn off to the subject by sixth grade. Videos, though, can make use of animation tools to let students make movies of graphs or pendulums or other concrete phenomena, which helps them understand the relationship between math principles and the real world.

### English

In elementary school, a teacher can have a child turn the pages of a book, then record a narration track; the teacher can create a movie using both the book pages and audio. Students at all levels can participate in digital storytelling, using a combination of video and still images plus audio to produce narratives.

## WHO'S DOING IT: USING DIGITAL VIDEO IN TODAY'S CLASSROOM

### *Serrano Intermediate School: Exploring the Video Frontier*

At Serrano Intermediate School in Lake Forest, Calif., students studying early explorers such as Lewis and Clark don coonskin caps and fringed leather jackets, then head into the wooded schoolyard armed with video cameras. Here, they act out adventures from the 17th-century frontier — shooting in groups of four or five — before returning to school to edit their videos.

Once finished, students upload their videos to Google Earth and, using Google's Placemark feature, embed them at the spot where the original action took place. Viewers can then call up a pinpoint along, say, the Oregon Trail, and click on the video to see a re-enactment of the event. The Serrano students also upload their videos to SchoolTube.com.

Serrano history teachers Luke Pine and Robyn Lee began using video cameras with students in the fall of 2010, after a grant funded the purchase of 19 cameras and a camcorder.

“There are a lot of great benefits to [making videos],” says Pine. “When you learn something just from the history books, it’s ‘Okay, open up your book and learn about Lewis and Clark.’ The typical student will remember the information for a day or two if doing the traditional method of learning.”

But students who need to research a topic in order to create a video for it — and then act it out — have more long-lasting learning, says Pine.

Students also are more engaged in class work when it involves making videos. “It’s exciting and fun for them. There’s a lot of enthusiasm: ‘Are we recording today?’”

Pine had no formal video integration training, and had to learn by trial and error what worked best with his five classes of eighth-grade students. During the course of his first year, Pine learned that time management is key — and that he needed to allow more of it.

Students need time to read about a topic and to prepare a script, not to mention time to pick out and put on costumes. Teachers need time to plan and prepare the lesson and activity for the students.

Pine also wrangled with software — learning the software as well as finding a free video-editing program that would run on the school’s computers.

“That was an issue early on in the year: How am I going to learn the program and then teach it to the students? It all just takes time, time, time.”

Another challenge was that a few parents didn’t want their students to be in videos that would be posted online. Children who didn’t have signed permission forms were not filmed, but worked behind the scenes, recording and editing.

Because making movies takes so much time, and because he must cover a significant amount of curriculum during a school year, Pine doesn’t think he will dramatically increase the amount of video-making he assigns his students. At present, students spend about eight days out of 180 total school days working with video.

Pine says video-making is “a great tool for learning.” However, the process doesn’t replace other methods of learning; students still turn to books or other informational sources to learn about their topic before they can film it. Creating video is “an enrichment activity more than anything,” says Pine.

The video and mapping projects met California content standards, helping students learn chronological and spatial



skills. Pine and Lee say students improved in writing and critical thinking.

In addition, students picked up 21st-century skills, says Pine. “They are learning some skills that a lot of them can take to the future,” such as learning how to edit video on a computer. “Some of our kids are using video cameras for the first time ... They love it.”



To view one of the student-made videos, visit <http://www.schooltube.com/video/6af634582cb74ad0c4f5/Sacramento-Ca>.

### **East Hall High School: Passive Students Become Active Learners**

Students in John Hardison’s American literature class at East Hall High School in Gainesville, Ga., get plenty of traditional reading and writing time — about 50 percent of the class is spent this way. But the rest of the time, students are involved in creative work: sketching storyboards, filming scenes, writing songs and recording soundtracks for the movies they’ve made.

In 2007, co-teachers Hardison and Mark Anthony asked their school board to fund a new classroom concept “where it would still be language arts, but you would have a stage, green screens and interactive whiteboards.”

They got what they asked for. The school board built a custom classroom — knocking out walls to make one double-sized room — and bought a drop-down screen, two projectors, 10 computers, five microphones, an interactive whiteboard and a 20-channel music board for instruments.



What had been simply Room 113 morphed into Studio 113. Here, students enjoy a room tricked out with a six-sided, foot-high stage in the middle; a padded recording booth where they can record music or other audio; a mini computer lab; and two 10-foot by 10-foot walls painted green that can be used for green screen effects.

Hardison calls Studio 113 a “physical English class” — one in which students are actively involved in learning English core standards using not only traditional methods (books, papers and lectures) but also digital video and audio technology.

When Hardison was a high school student, he says, “I felt the teachers were boring and not very creative at all.” Hardison, needless to say, operates differently.

He and Anthony teach classics of American literature such as Arthur Miller’s *The Crucible* or Bret Harte’s *The Outcast of Poker Flat* by having students create their own video reinterpretations, complete with original songs. The “Poker Flat” video includes superimposed text that tells viewers which literary standard (or concept) is being portrayed: tone, symbolism, characterization, and so forth.

While test scores and grades “have been great,” says Hardison, he can’t offer exact scores or averages to show the effect of the digital technology on learning. Instead, he says, “The main thing is you have to be here to sense it — to feel our energy, to see how the kids are engaged and are applying it to something creative or some real-world issue. They’re not just sitting here reading literature with 30 or 40 heads on a table.”

But this doesn’t mean Studio 113 classes are all play and no work. The classes are “standards-driven, from day one,” says Hardison. Students learn that “you could do a movie for two weeks, it could be hilarious, the whole class could love it, and you would get an ‘F’ if you were not showing knowledge of the standards.”

One challenge confronted is fitting creativity into a new classroom schedule, where 90-minute classes were recently cut to 50 minutes. Hardison and Anthony have had to learn how to be more efficient and organized. The teachers front-load the material so it is organized and set up for students before class periods begin. “You don’t just say, ‘go create this movie,’” says Hardison, pointing out that teachers need to understand the technology themselves in order to teach it — and to handle glitches when (not if) they occur.

Learning about technology is important for students, too, says Hardison. “These are going to be the tools for the 21st century and the global economy. I often tell them, ‘If you struggle with

computers, you may struggle in the global economy.’”

Even without the technology-rich set-up on display in Studio 113, schools can still employ digital learning, says Hardison.

While Studio 113 allows students to create more polished videos and audios, before Hardison had this equipment, he was able to use cameras and the computer lab to help kids make videos — and experience the benefits of digital learning.

The point, he says, is that “you can do almost everything we do with a camera, some ingenuity and some creativity.”



**To learn more about the East Hall High School initiative, visit:**

**The Studio 113 student video site —**  
[http://www.hallco.org/ehhs/site/index.php?option=com\\_hwdvideoshare&task=viewcategory&Itemid=126&cat\\_id=17](http://www.hallco.org/ehhs/site/index.php?option=com_hwdvideoshare&task=viewcategory&Itemid=126&cat_id=17)

**The link to “Outcast of Poker Flat” —**  
[http://www.hallco.org/ehhs/site/index.php?option=com\\_hwdvideoshare&task=viewvideo&Itemid=126&video\\_id=94](http://www.hallco.org/ehhs/site/index.php?option=com_hwdvideoshare&task=viewvideo&Itemid=126&video_id=94)

### **Cochrane Elementary School: Primary Students Teach the World**

Last year, Sarah Bumpas, a technology teacher at Cochrane Elementary School in Louisville, Ky., won a \$100 Walmart gift card in a teacher raffle.

She decided to use the money to buy a small video camera to use in class. Another teacher donated an additional \$100 — and Bumpas was in business. She picked up a camera and a tripod, which she began using with two small groups of students (12 fourth-graders and 12 fifth-graders) who came to her once a week for 50-minute sessions.

Thus “Cochrane Pop” was born. The podcast project is an alternative to the popular BrainPOP educational website, which is partly subscription-based.

“The students thought they could make their own videos to teach people things and it would be free for anyone — and that we could teach things just as well as BrainPOP could,” says Bumpas.

Students began making podcasts in the fall of 2010 on a wide variety of science and social studies subjects — everything from the role of women in the American revolution to the



COCHRANE ELEMENTARY STUDENT USES DIGITAL VIDEO CAMERA.

development of the inline skate. They chose topics that hadn't already been covered on BrainPOP.

The podcasts were "very student-led," says Bumpas. "They chose what kind of topic to do, they divided up who was going to write which script and they voted on who was going to be the actor."

Bumpas found that video-making helped the children grasp and retain core content knowledge.

"Those science and social studies topics they researched they can remember better than I do," says Bumpas. "It's great for their comprehension."

The children also learned technology skills. For most, Bumpas' class was their first exposure to video cameras. When Bumpas brought in her new camera, students didn't even know basics. "I assumed they'd know the red button meant start and stop, but I had to show them," she says.

Most also aren't terribly familiar with computers. "We have an 85 percent free and reduced lunch, so most of the kids don't have computers at home and Internet access."

For the first four Cochrane Pop videos, Bumpas used a green screen she made by taping a green bulletin board to a wall. However, the homemade screen "didn't work great — if there was a wrinkle or shadow, you could see through the kids."

She wound up buying a small green screen. "It's still not really big enough — you can only shoot a little tiny area." One boy had to kneel on a chair in order to fit within the screen's dimensions.

Students used backgrounds downloaded from the Internet or created their own using an online service called Kerpoof. For editing, Bumpas brought in her laptop, which is loaded with movie making software. Students take turns with the software, two at a time, using an external mouse rather than the trackpad (which was difficult for them to master).

"I honestly sort of doubted they'd be able to come up with scripts without prompting from me," says Bumpas. But to her surprise, the students added opening and ending jokes. "Their creativity really surprised me, and how they were able to collaborate together without being selfish or competitive about it."

In the future, Bumpas says, she will provide more time for students to work on scripts before allowing them to begin filming.

"They want to jump to the video part sooner than they are ready for," she says. "Writing the script is the most important part." She hopes to collaborate with English teachers so students can do this during that classroom time before coming to her technology room for video creation.

Bumpas has applied for a grant in hopes of getting a larger green screen.

In written reflections about the Cochrane Pop projects, students frequently say they learned leadership and teamwork skills, and are proud that their creations can be seen by others on SchoolTube.

Says William, a fourth-grade student in Bumpas' class: "It is helpful to other kids because it makes education so fun."



To view some student videos, visit:

<http://www.schooltube.com/video/6acf73f7baaa2daf0d6b/Cochrane-Pop-Women-in-the-American-Revolution>

<http://www.schooltube.com/video/8b3f810e4e3a51758cc7/Cochrane-Pop-Elijah-McCoy>

### **Mt. Hebron High School: School-wide Video Production**

Duck your head into many of the classrooms at Mt. Hebron High School in Ellicott City, Md., and you are likely to find a project involving student-made video.

Social studies students create videos based on a significant event in history. For instance, interviewing someone about a historical event they lived through, such as the Kennedy assassination.

An English literature class makes its own version of the *Canterbury Tales*, called the "Hebron Tales." Students create a present-day rendition of *Pride and Prejudice* and a parody of Shakespeare's *Hamlet*.

Science students studying forensics set up a crime scene, then videotape efforts of the “detectives” to solve the crime, a la “Forensic Files.”

Spanish students produce a TV news show, movie reviews and trailers.

Leadership students interview fellow students and create video biographies.

The widespread nature of video projects at Mt. Hebron — involving about 60 percent of the school’s 1,487 students — is largely due to the efforts of Media Specialist Scott Robinson, a 20-year education veteran who actively encourages all his teachers to use digital media. At the beginning of each school year, Robinson gives a presentation and sends materials to teachers “to try to expose as many curriculum classes as possible to technology.” He also works with classes throughout the year to help students use video in projects.

As a result, Mt. Hebron students excel in filmmaking. In the 2010 Howard County Student Film Festival, says Robinson, Mt. Hebron took both first and second place and had the most entries; in 2011, the school took second, third and fourth place.

One problem Robinson has encountered is frequent technology change, resulting in incompatibility issues between software and hardware. Mt. Hebron is on track to be a technology pilot school in 2012, says Robinson, which will allow the school to have both Mac and Windows products (presently it is Mac only). Robinson hopes this will make compatibility less of an issue.

“I think students like to learn from students,” says Robinson in response to why making videos is important. “Instead of just writing a paper, they really enjoy producing a video. They are working in groups, so they work more collaboratively; they have to learn to share and to budget their time. I think a lot of them enjoy working with technology and putting on music and special effects. It’s a different way of presenting their subject matter, but it’s something students really enjoy.”



**To view a student video, visit**  
[www.youtube.com/watch?v=MWB2JSOILX0](http://www.youtube.com/watch?v=MWB2JSOILX0).

## **MAKING IT HAPPEN**

Video cameras — whether in smartphones, cellphones or stand-alone camcorders — have become ubiquitous, relatively inexpensive and easy to use. Free applications make such technology an option for even cash-strapped districts.

Yet making video truly an effective learning device for students requires teachers be better trained, and that means the faculty who train teachers also need to be better trained, says Bull.

Without this occurring, we will continue to have “islands of excellence” where well-prepared teachers are accomplishing amazing things, without yet seeing similar results on a wider scale. Unfortunately, says Bull, teachers continue to receive video technology prep sessions that lump core courses together and treat video as a generic, one-size-fits-all tool. This needs to change, he says, so that each content area is treated distinctly.

After all, 21st-century skills are needed for a productive citizenry. And video creation helps students gain these skills.

Not to mention, as William from Cochrane Elementary reminds us, making movies is just plain fun.

## **RESOURCES**

**California K-12 Student Technology Showcase**  
(more information about Serrano project)

<http://www.k12hsn.org/resources/showcase/gallery/gallery.php/showcase/?cmd=vi&typ=mda&id=1070>

**Award-Winning Student Videos and Resources**

<http://site.aace.org/video/books/teaching>

**Free Online Tools for Students and Teachers Making Digital Movies**

<http://www.primaryaccess.org/>

Bull, Glen L. (2010). *Teaching with Digital Video: Watch, Analyze, Create*. International Society for Technology in Education (ISTE).

## **ENDNOTES**

1. [http://www.p21.org/index.php?option=com\\_content&task=view&id=254&Itemid=120](http://www.p21.org/index.php?option=com_content&task=view&id=254&Itemid=120)
2. <http://www.corestandards.org/>
3. <http://www.att.com/Common/merger/files/pdf/aspire/overview.pdf>
4. <http://newsinfo.iu.edu/news/page/normal/14593.html>



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