

LEARNING FROM DIGITAL VIDEO

Authentic Doing using video to contribute to the world

The use of digital technologies in a course can completely change the nature of what teachers and students do. Consider student work that provides valuable primary source material for students and researchers throughout the world. Students cross the boundary of “learner” to “contributor” as their work takes on real meaning beyond the classroom. Students are not merely modeling and practicing techniques used by professionals; they are completing work that is being used by others throughout the world. The Internet and digital technologies that enable worldwide publishing can provide opportunities for teachers to design their own projects that directly contribute to communities outside their schools.

Take the Urban School of San Francisco’s award-winning project, *Telling Their Stories: Oral History Archives Project* as an example. Working in teams of three, students in this oral history course conduct professional-style interviews with elder witnesses of key 20th century topics including survivors of the Holocaust, concentration camp liberators, and Japanese Americans forcibly interned in relocation camps during WWII.

Using a mobile digital video studio, students capture each 2 hour interview and complete all transcription and editing on their own laptops. The result of their work is a public Web site containing the interviews, complete with full-text, video and audio. (See *Telling Their Stories* at: www.tellingstories.org).



Similar “Authentic Doing” projects can be adapted in much simpler ways with the use of a single camera and editing tools. In fact, you can record directly to computer in a final compressed product using Quick-time Pro, thus eliminating the whole tape to disk transfer process. This can be directly posted on a website without further work.

Using digital video to document people’s stories can be used at all grade levels, from recording a local children’s author reading to a kindergarten class to sophisticated documentary-style multi-cut interviews at the high school and college level. One suggestion is to re-think the traditional “guest speaker” approach and instead turn this into an interactive interview that can be later published on the Web for other students to use. The challenge is to find locals in your area who’s expertise, knowledge and/or experience would be useful to others if shared with a wider audience.

Using video, students can become true deliverers of meaningful content.

Stop Action Animation tools to enhance comprehension

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Abstract concepts pose unique challenges to teachers and students. Most of us are complex learners who need a combination of visual, auditory and tactile stimulus in ways that are both challenging (problem-based) and repeatable (review). Simply listening, reading or viewing an explanation does not go far enough for us to more fully comprehend - we need more direct personal action.

Simple new digital tools that enable students to create stop-action animation is one way to help reinforce abstract concepts.

One of the simplest ways to use animation with students is with clay. It is cheap, comes in multiple colors, can be formed into any shape and can easily be manipulated for frame-by-frame capture using a simple digital video camera or even the built in camera on an Apple MacBook.

At Urban we use iStopMotion (www.iStopMotion.com) which is loaded on all student and teacher laptops. This simple tool lets students capture — frame-by-frame — clay figures of molecular change in 9th grade biology and more advanced DNA sequencing in upper-division Genetics. (See sidebar explanation of one project).

The animations are planned in advance in small groups and filmed during one class period. In most cases students use a camera on tripod, but others have successfully used a hand-held camera as well as their MacBook's built in camera with great success. Students are able to accomplish the

technical tasks using iStopMotion with only a few minutes of instruction. Students generally enhance their movies by importing the project into iMovie where they can add more effects, a narration track, titles, and sound effects.

What results are often very creative group projects that reinforce learning — as well as highlight misconceptions — as they talk through the sequences needed to accurately demonstrate the concepts. One important added benefit is the growing archives of movies as learning tools for future classes.

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The first two weeks of Genetics are dedicated to review of basic cellular processes that were learned previously (DNA replication, transcription, translation, meiosis, etc.). Rather than having them simply do review reading and problems, I thought they would recall and review the information better by having to make a physical manipulatives to illustrate the process. In addition, they were expected to study their topic in greater detail than years past and also teach their classmates about these new details. The emphasis was on highlighting the most crucial and/or most incomprehensible parts of each of their processes.



Several frames from a clay animation movie demonstrating DNA sequencing.