Chapter 13
Making and Thinking Movies in the Science Classroom

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EXECUTIVE SUMMARY

Making movies in the science classroom can be an engaging way to teach and assess science content understanding, but it can also be a way to encourage students to be critical of the media that is becoming more and more a part of their everyday lives. In this chapter, the author describes a sample inquiry-based project in which students created movies to learn science content. Background is given on classroom management, materials, movie-making basics, and assessment. The project is also framed by critical media literacy, which keeps in mind not only the messages that media products can send, but the messages the tools themselves may also send. In this way, students and teachers not only make movies, but think movies in the science classroom.

INTRODUCTION

When you overhear students talking excitedly about video games, the internet, television, or movies, do you ever wish that they could get that excited about what was happening in the classroom? What if you could put them on the other side of technology—the productive and rewarding side? Using simple software and hard-

ware, students can plan, shoot, and edit movies of their own design. Not only is this high-tech skill applicable in the real world, it is a powerful and engaging way to teach science content and allow for students to think critically and multimodally.

CRITICAL MEDIA LITERACY

Technology literacy in the classroom has come in variety of forms for both teachers and students. In today's climate, it is presumed that teachers should be technology literate so that students can build both content knowledge and technology skills. Early in the move toward technology use in the classroom, the emphasis in the research on teachers and technology was geared toward understanding why teachers did or did not put computers to use in the classroom. Studies such as Rosen and Weil (1995), McGinnis (1996), Becker (1994), and Jones and Carr (1992) found that teachers use technology more if they are men, have more experiences with computers, and if technology is used, that use is consistent with the skills needed in the content area being taught. Later research went beyond the understanding of the general use of technology in classrooms, toward the importance of a technological literacy for teaching in a constructivist manner. Studies such as Neidenhauser and Stoddart (2001), Ertmer (2005), Rakes, Fields and Cox (2006) paid more attention to pedagogy and found that teachers' uses of technology are consistent with the pedagogy to which they ascribe. What this meant, according to these researchers, was that if technology was to be used effectively, teachers must learn to use it to teach *with* the technology using a constructivist approach.

At the same time that teachers were being encouraged to teach constructively *with* technology, other researchers were focusing on the need to be critical of the very technology being used in the classroom and other technologies of the media. Researchers called this critical literacy, media literacy, digital visual literacy, and Critical Media Literacy (CML), the term which I will use in this chapter. Alverman & Hagood (2000) reviewed the literature of the mid-nineties and put together a broad definition for CML and expressed a need for a critical understanding and use of technology in schools. Scharrer (2003), Horn (2003), Van Heertum and Share (2006), and Spalter and van Dam (2008) continued the conversation regarding a critical literacy toward technology with theoretical discussions regarding that need that should be developed by teachers and their students. Some empirical studies have been conducted, mostly on the benefits of using web 2.0 technologies for increasing critical reflection and dialogue with practicing teachers or preservice teachers. Researchers such as McLeod and Vasinda (2008), Yang (2009), Woodcock (2009), and Ryan and Scott (2008) have studied the benefits for critical reflection in these contexts. In research on science classrooms in particular, the same approach has

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