

# Chapter 4

## 3D Video Production in Education

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### **EXECUTIVE SUMMARY**

*Use of video by teachers can make learning more engaging or content easier to understand. Video shown in classrooms can be created by others and adapted by or created by the teacher. Traditionally, video created by teachers can be produced with inexpensive digital cameras and basic editing software. With a renewed commercial interest in Three-Dimensional (3D) video and with video equipment costs declining, the option now exists to have 3D video in classrooms. What is not known is the process to allow for teacher-created video that can take advantage of the 3D format. This case details how an undergraduate teacher candidate created a 3D video using existing production equipment and freely available software. The chapter examines the planning details, course design, and outcomes related to 3D video production. Suggestions to educators for integrating 3D into their schools are also included.*

### **INTRODUCTION**

Teachers currently have the option to make learning more engaging through creating video resources. Video resources may be used for recasting ideas, demonstrating complex or dangerous simulations, creating video logs, or simply presenting material in a more visually appealing manner for students (Pelton, Sehgal, & Pelton,

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2009). Teachers can integrate video production in any subject area for student-based projects as well. Typically, video production involves four stages: planning, production, editing, and displaying. In the 1990s, major changes with computer software allowed teachers to edit video much more easily. Evolution in camera technology also made the capture of high quality video easier. A direct result of these changes was more overall production and higher production quality. Although not always as polished as commercial productions, effective videos can be produced by educators. Continued advances in technology have facilitated the sharing of video online using the Internet or in the classroom using data projectors and mobile devices such as iPads, Blackberries, iPhones, and netbooks.

Continued innovation in computer software and hardware, as well as camera equipment, has allowed for easier access to yet another video mode, Three-Dimensional (3D) video. Although the format has existed for many decades (Zone, 2007), 3D video has once again become a 'hot' trend in video. There exists a general excitement about 3D video, but is it something that can be used in teaching and learning? In educational settings, most exposure to 3D video has been in simulated learning environments such as Second Life or in game systems (Gillispie, Martin, & Parker, 2009). The application of 3D worlds or Massive Multiplayer Online Gaming (MMOG) (Bonk & Dennen, 2005) for learning has the potential to engage learners in new ways, but 3D is still evolving as a video presentation option. 3D is currently used in educational applications, mostly in computer sciences, to teach animation and in healthcare related content (Garcia-Ruiz, Tashiro, Kapralos, & Vargas Martin, 2011; Ludvigsen & Fjuk, 2001). Research into using 3D video in other areas of learning is necessary to determine if it can develop into an effective tool to support learning. Researchers and educators must start addressing the potential behind the application of 3D technology and content to answer questions such as: Can 3D video be used by learners to understand complex concepts in other subject areas? Is it possible for regular classroom teachers to easily create 3D video? We can only answer these questions once we have developed a broad range of 3D resources in classrooms and other learning environments. As with most successful technology application, it is likely that the true success of 3D video will come from the teachers who use it.

Regular Two-Dimensional (2D) video production is taught to pre-service teachers and is used in many learning environments. Thanks to the advances in technology, pre and in-service teachers can acquire basic production skills in a relatively short period of time. Resources, both print (Ang, 2005; Aronson, 2006; Rodriguez, 1995) and online (CyberCollege, 2012) are available to help those interested in traditional 2D video production. For those interested in creating 3D video there is a growing body of knowledge but not yet as many opportunities to learn, as compared to traditional video. A comparison of the two video formats shows that many of the production

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