

# Chapter 11

## Stereoscopic 3D: Going Beyond Texas Tech University Libraries' 3D Animation Lab

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### EXECUTIVE SUMMARY

*This chapter summarizes information gathered in the first two phases of research being conducted at Texas Tech University (TTU) Libraries on the feasibility and potential benefits of using stereoscopic 3D content in a classroom or library. The authors share background information gathered during the first phase of the research, including an overview of stereoscopic 3D technology and a review of related research. They then discuss findings and recommendations from the second phase of the research, including detailed coverage of 3D equipment, practical advice for using 3D technology, and results from demonstration and survey sessions conducted with TTU faculty, staff, and students. The authors also share options for accessing and creating stereoscopic 3D content. They end with a discussion of some future directions of stereoscopic 3D.*

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## **INTRODUCTION**

This chapter focuses on findings from the first two phases of research we have been conducting at Texas Tech University Libraries on the use of stereoscopic 3D in education. We observed that stereoscopic 3D was becoming increasingly popular in the entertainment industry and that this popularity was spurring the production of 3D devices for personal use as well, such as 3D TVs, 3D Blu-ray players, and 3D digital cameras. Since this technology was related to resources in the Libraries' 3D Animation Lab, we secured internal funding in the spring of 2010 to purchase some of the newer consumer 3D equipment (3DTV, 3D Blu-ray player, 3D digital camera) in order to be able to carry out a multi-stage research project. We have completed the first two stages thus far and are currently weighing options and opportunities for moving forward.

The first phase of our research was mostly investigatory. We learned more about the technology of stereoscopic 3D, including the history of 3D, current technology, trends in 3D, how 3D is utilized, and how it interacts with regular vision. We also reviewed current academic literature about 3D in education. Though that was the initial phase of our research, our investigation of these topics is ongoing as developments in this field—especially hardware and content options—are ever evolving. The second phase of our research consisted of conducting 3D demo and survey sessions with students, faculty, and staff from around campus.

We begin this chapter by sharing some of the background information we discovered. We follow with a description of 3D equipment, practical advice for using 3D technology, and a discussion of the demo and survey sessions we conducted. We then share options for accessing and creating stereoscopic 3D content. We conclude with a discussion of future directions of stereoscopic 3D.

## **RESEARCH PHASE 1: STEREOSCOPIC 3D BACKGROUND**

### **History**

When many people think about 3D, they may picture the red-blue anaglyph pictures and movies produced in the past or more recent movies like *Avatar*. However, 3D technology dates far earlier and covers a wider range. Surprisingly, our basic technical understanding goes all the way back to the 1830s (Stereoscopy, 2012). Since then, technology has developed considerably. Further, today's 3D technology can be explained in part by its history. Stereoscopic 3D is a combination of the natural process of vision, along with technologies and/or techniques that exploit it to create the illusion of depth in an image. Over time, technology has made significant

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