

Chapter 77

Using Video Tutorials to Learn Maya 3D for Creative Outcomes: A Case Study in Increasing Student Satisfaction by Reducing Cognitive Load

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ABSTRACT

This study tracked the transition from traditional front-of-class software demonstration of Autodesk's Maya 3D to the introduction of video tutorials over a five-year period. It uses Mayer and Moreno's (2003) theory of multimedia learning to frame the analysis of results. It found that students' preference for the video tutorial increased over the course of the study. Students' preference for video tutorials was correlated with a reduction in cognitive load, increase in satisfaction with the learning experience and subsequent reduction in frustration with the software. While there was no apparent change in measurable outcomes, students' satisfaction rating with the video tutorial in preference to other learning media suggests more efficient learning was achieved. As a consequence of the findings, the traditional demonstration was discontinued. Overall, the introduction of video tutorials for learning Maya 3D reduced frustration and freed up time for more creative pursuits – the primary purpose for learning the software.

INTRODUCTION

Traditional forms of software tutorial instruction include front-of-class demonstration (see Figure 1), books, online documents and digital resources such as files that can be opened in software, edited and reconfigured in different ways to achieve various creative outcomes (McNeil & Nelson, 1991). Increasingly, online video tutorials are providing an alternative learning medium. They can be sourced from online repositories such as: YouTube, *Digital Tutors*, and software online help websites such as Autodesk, among many other online sources. Video tutorials step through sequences of actions towards a prescribed goal – usually to demonstrate a particular function of a group of tools within the software. Anecdotally,

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learners are increasingly accessing online video tutorials as they prefer the apparent easier step-by-step procedural learning they provide. However, little research has been conducted into why learners may show a preference for online video tutorials over their traditional text-based alternatives.

This study attempts to address the need to provide improved learning experiences for early learners of Autodesk's Maya 3D software package. In so doing, it provides a better understanding of the preference by early learners of video tutorials over text-based equivalents. It was found that more satisfying learning experiences could be achieved using video tutorials than for text-based tutorials and that this was largely due to the reduced cognitive load video tutorials provide. It is worth noting, however, that not all learners chose to use video in preference to text-based tutorials and others continued to use both in conjunction. The remainder of this report discusses the shift from text-based tutorials to video in the classroom and its impact, as well as provide a theoretical explanation for the overall more satisfying learning experiences reported by participants.

Autodesk's Maya 3D

Autodesk's Maya 3D is a modelling, animation and visual effects software package. It is widely used in the animation, games and visual effects industry. It is used by animation companies such as Pixar, Dreamworks and Blue Sky Studios; games companies such as Blizzard, EA, Polyphony; and, visual effects companies such as Pixomondo, Double Negative, Industrial Light and Magic. It is not an easy product for early learners to master (Park, 2004).

Traditional Maya 3D Instruction

Traditional software instruction, such as Maya 3D, follows the front-of-class demonstration process – the teacher performs operations using the software whilst its interface is projected onto an adjacent wall (see Figure 1). Students attempt to follow the teacher's instructions while the teacher is demonstrating. Although the teacher may moderate their demonstration pace to allow time for the students to catch up, some students are unable to match the pace of the teacher and may stop to take notes instead. For other students, the teacher often needs to interrupt the demonstration to assist them when problems are encountered that are not addressed in the demonstration. As such, a 20-minute tutorial exercise can take more than an hour to complete as a demonstration (McNeil & Nelson, 1991). An online PDF guideline may supplement the in-class demonstration. With the software package open, learners can open examples and manipulate the various options.

Autodesk's Maya 3D Software

Autodesk's Maya 3D software is not designed as a simple tool for early learners. It has been designed by engineers as an industry tool with few compromises for ease of use. It is a powerful 3D modelling and animation software package. It has a complex and intimidating interface (Park, 2004) (see Figure 2). It is particularly intimidating for those who simply want to use Maya for creative pursuits. The complexities of the software make it very difficult to begin to be productive without first learning how to use the tool in detail. It is necessary to amass a considerable legacy of knowledge about its functions and procedures for achieving specific results before any real production can proceed. This is typical of many software packages in the screen graphics industry. Hence, a method for making it easier for early learn-

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