

Research Skills: CAD 123, Instructional Multimedia for Computer Aided Design

CAD 123 is my Master's project and represents months of research and development. This Flash application is intended to supplement and enhance teacher-lead instruction as a step by step illustration of format settings and styles for Architectural drawings in AutoCAD LT 2009. Using Flash animation, this project presents an audio-visual learning environment for the illustration of complex concepts and step-by-step exploration of common work flows. This project was first started in spring 2008 in SED 600 with research into pedagogical approaches to teaching computer aided design (CAD) as well as effective uses of multimedia for instruction. During this time I learned a variety of ways to combine text, graphics, video, and audio for effective instructional explanations. As well, I learned to incorporate a project-based approach to teaching a set of complicated concepts.

Part of my research required many hours of experiencing other similar tutorials. This part of my research led me to numerous sites and a lot of what I found was nothing more than collections of web pages of short, unrelated explanations illustrated with a few screenshots. Some tutorials were entirely video screen captures with voice over instructions. I was looking to create something more robust, something that could explain more than one concept and tie them together with one valuable result at the end. I also wanted to create a tutorial that would capture the interest of students of various abilities

and provide resources with examples. The result was a modularized Flash presentation that presents students with concepts, examples, and video. The step by step instructions are illustrative explanations that contain both text and animated graphics to engage a student's attention and deepen his understanding.

One of the greatest challenges of creating this project was the organization, navigation, and coding of the presentation. For this, I turned to my earlier lessons from SED 618 and SED 619. Although I had originally planned to use the advanced Actionscript 3 code, I was able to accomplish all my objectives using the older, simpler Actionscript 2 code. I was spared the tenuous task of writing complex statements and instead made use of ready-made code for all the events occurring within the application.

SED 600 and the initial literature review assignment was critical to establishing a frame work within which to proceed with development and to identify the key resources I would need in order to complete my project. The readings provided me with the understanding of the pedagogical strategies currently used in education. By reviewing other similar tutorials, I also became aware of the variety of multimedia applications currently used in education. As well, by reviewing previous coursework and assignments, I was able to collect valuable tools and techniques that I could apply in the development of my project. I felt this was one of the most rewarding aspects of undertaking the development project.

Ultimately, by engaging in the process of research and development, I have developed a sophisticated set of skills critical to the correct use of educational

technologies. I have learned the correct formatting of research papers, the use of statistical information to support a hypothesis, an array of software for the authoring of multimedia assets, and the process of developing and testing educational software.

I believe this student learning objective to be critical in the proper development of Master's degree candidates. I also feel that work on this SLO begins in a timely way by being introduced after the second semester of the program. This provides adequate time for the literature research part, but, as in the case of the development project, this still does not provide enough time for development, testing, and data analysis.

Notwithstanding, it is an important process to complete, because it develops good research and writing skills. I am very pleased with the results of my project, given the scope and time in which to work, and I feel it is a good representation of my research and development skills. As the artifacts would demonstrate, I feel the Flash application and the research paper both showcase my technical and academic skills as a master of technology.