

Streamlining WBT Development with Captivate* & Flash at Children's Hospital Seattle

*Captivate is formerly known as RoboDemo

ASTD TechKnowledge 2005
Session TH201
February 2005

Presented by

Bryan Zug

Web Based Training Developer
Clinical Information Systems (CIS) Training Team
Children's Hospital and Regional Medical Center
Seattle, Washington
Phone: (206) 987-1496
Email: bryan.zug@seattlechildrens.org

Karen Hofmann, RN, BSN

Trainer; WBT Content Expert
Clinical Information Systems (CIS) Training Team
Children's Hospital and Regional Medical Center
Seattle, Washington
Phone: (206) 987-1797
Email: karen.hofmann@seattlechildrens.org

Children's
Hospital & Regional Medical Center

About the Authors

Bryan Zug

Bryan Zug joined Children's Hospital of Seattle in April 2003 to develop their first enterprise-wide web based training (WBT) products. The resulting web application is a combination of Flash, ASP, and SQL-Server technologies that serve as the key elements for training the hospital's 2500+ staff on a new medication ordering system introduced in November 2003.

Working as a web and multimedia developer since 1996, Bryan's projects have included WBT, e-commerce, content management systems, and user interface design for clients that include Bermuda Fire & Marine Insurance, Volkswagen / Audi of Latin America, Premera Blue Cross, and Perkins Coie law firm, among others. Bryan has also performed quality assurance systems analysis for Real Networks and associated client partners such as CNN, ABCnews, CBS, FoxSports, Major League Baseball, NASCAR, and E!

Bryan teaches an introduction to RoboDemo class which he developed for content experts at Children's Hospital. He has also instructed college and high school classes that include electronic media design, advertising, public speaking, and sex education. Bryan has a BA in sociology from Pepperdine University in Southern California.

He lives near Seattle in Renton, Washington with his wife Jen, his daughter Ruthie, and their dog Scout. When not doing web development, Bryan serves as pastor for Harambee Church in South Seattle where he provides career counseling, performs leadership development mentoring, and leads film classes.

Karen Hofmann, RN, BSN

Karen Hofmann's pediatric nursing career at Children's Hospital spans 24 years including 6 years as a charge nurse and 3 years managing the Pediatric Intensive Care Unit (PICU). Karen earned a Bachelor of Science in nursing and has mentored hundreds of staff nurses as they joined the organization. Her growing interest in technology and clinical information systems led to a career shift in 2003.

Today, Karen develops instructor-led and e-learning courses including WBTs. She has logged numerous classroom hours instructing clinicians (nurses, physicians, and other healthcare providers) and clerical staff on new clinical tools.

Karen lives in Seattle with her husband, Philip and two teenage daughters Alie and Hanna. Hobbies include gardening, Tai Chi, reading, cooking and watching her daughters perform in gymnastics and dance competitions.

1. Learning Objectives

- Apply the key strengths and weaknesses of Captivate and Flash in the full WBT development lifecycle.
- Use Captivate to support streamlined project deliverable timelines by reducing Flash developer resources required for course production of enterprise-wide WBTs.
- Enable novice, non-technical content experts to efficiently produce technical training content for your own learning audiences.

2. Methodology

- Case Study
 - Overview of our work at Children's Hospital over the last 2 years.
 - How we chose development/delivery technologies.
 - How we rapidly equipped novice multimedia content developers to create WBT simulation content.
 - How we reduced process steps using Captivate to Flash functionality.
- Captivate Demonstration
 - Short introduction to and demonstration of Captivate.
 - Demonstration of Captivate to Flash functionality.
 - A look at our WBT development Flash templates.
 - Overview of our WBT development lifecycle.
- Success, Lessons Learned, Product Limitations
 - Our Experience.
 - Questions and Answers.

3. Case Study

- Children's Hospital Background
 - Independent Pediatric Hospital -- mission to be the best Children's Hospital
 - Teaching hospital with 3900 employees, medical Residents and community physicians. Includes 250 beds.
 - 24/7 patient care requiring training that is available during all shifts.
 - Computerized Physician Order Entry (CPOE) Project
 - Part of the overall strategy for an Electronic Medical Record.
 - Specialized pediatric implementation.
 - Orders entered by physicians for labs, medications, radiology exams.
 - Orders viewed and acted upon by nurses, pharmacists, radiologists, and others.
 - Huge culture change for the staff with many process changes.
 - 'Big Bang' go-live in November 2003.

- Custom Web Based Training (WBT) mandated by Hospital Medical Administration
 - Why Web Based Training?
 - Vendor Computer Based Training (CBT) not applicable to pediatrics.
 - Need to initially train 2500 employees over a 5 week period.
 - Large on-going needs for training Residents and students.
 - Need to train community-based physicians with Hospital privileges.
 - Certification tied to user completing interactive simulation.
 - Physicians as a unique audience
 - Not a typical adult learner. Different motivations.
 - As experts, they are uncomfortable with group learning.
 - Delay learning the system.
 - Higher than normal tendency to blame any problem on the software.
 - Hard to connect -- mentally and physically.
 - Learn best when immediate, specific, and useful.
- State of the Union: April 2003
 - Professional
 - There had never been a custom WBT Children's Hospital.
 - We didn't know what it would entail (time, resources, materials).
 - Had subject matter experts (SMEs) who were novices with multimedia development.
 - Had instructional design expertise for classes but not for a WBT.
 - Technical
 - No in-house WBT technical or UI design experience.
 - No concrete specifications.
 - Organizationally, no understanding of scope.
 - No robust Learning Management System (LMS) or Learning Content Management System (LCMS).
 - Left us looking for as much leverage as possible.
- Why RoboDemo (now known as Captivate)?
 - Allows rapid prototyping of training content.
 - Easy for non-technical SMEs.
 - Outputs in a variety of formats.
 - SME friendly -- .SWF (packaged Flash), .EXE, .DOC
 - Developer friendly -- .FLA (authoring Flash)
* requires that Captivate and Flash authoring environment are both installed.
 - Provides asset management in a single file.
 - Future extensibility
 - Can be integrated with a robust AICC/SCORM compliant LMS

- Includes interactive, eLearning, and multimedia tools.

4. Children's Hospital CIS Orders Online WBT Overview

- Learner / Course Model.
 - Authenticated user login.
 - Learner chooses course and role.
 - Currently have 11 roles so learners see only lessons which are relevant to their position.
 - Learner results are individually tracked.
 - Reports emailed to supervisor on completion.
 - If learner leaves course prior to completion, they will be returned to the same interaction upon return.
 - Custom system built on .asp (JavaScript), Microsoft SQL Server, and Flash.
- Content / Interaction Model.
 - Organized into modules and lessons.
 - Currently have 41 lessons total.
 - Lessons consists of a series of screenshots with description and required interaction. (see Figure 1: Lesson Interaction)

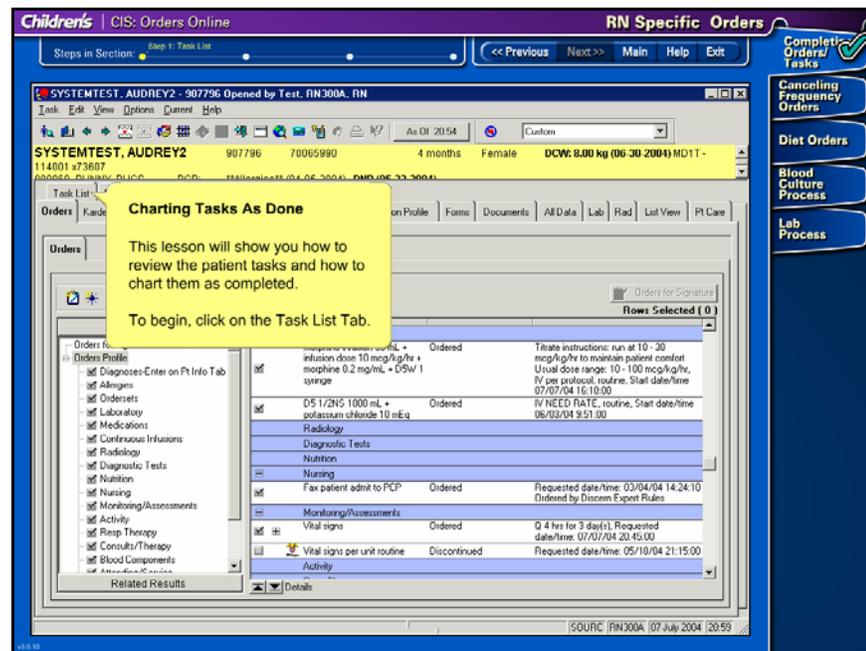


Figure 1: Lesson Interaction

- Learner gets two attempts to correctly complete the required interaction.
- On second failure, required interaction is demonstrated for learner and lesson then forwards to the next required interaction. (see Figure 2: Incorrect Response Alert)

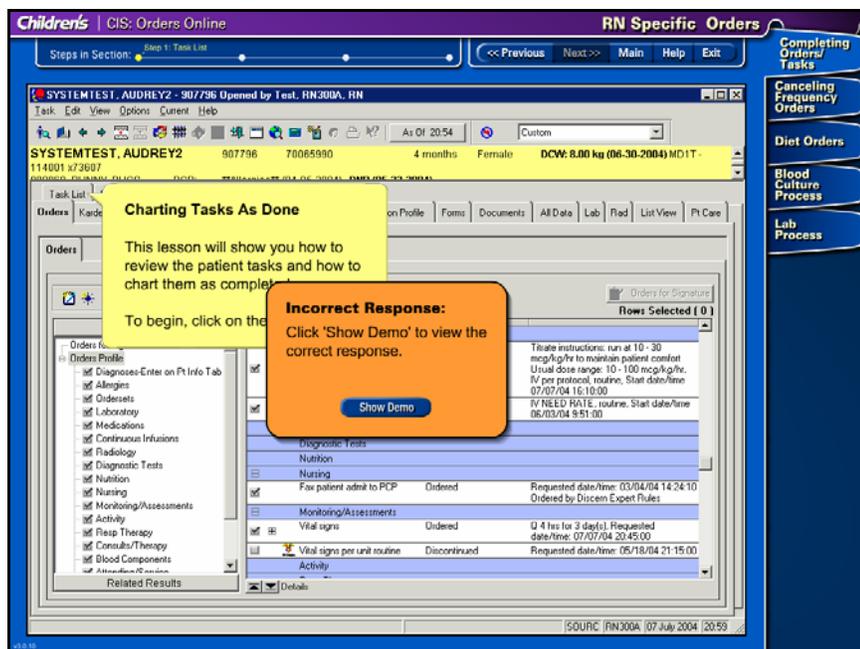


Figure 2: Incorrect Response Alert

- Captivate to Flash Production Cycle.
 - Captivate is used to rapidly prototype lessons which, once approved, are exported to Flash authoring files (.FLAs).
 - Flash developer migrates the library assets from the Captivate exported FLAs to custom WBT lesson templates.
 - Each interaction/demonstration is programmed in the lesson template. Then the .SWF is compiled and published to the web server which hosts the WBT web application.
 - Most of these steps are necessary because the organization does not have a robust LMS.
 - Currently takes about 1.5 hours of Flash production time for a 20 screen interaction lesson. Primarily achieved through:
 - Customized Captivate captions.
 - Flash IDE automation via JSFL which allows for the near completed scriptability of the Flash authoring environment.

5. Captivate Demonstration

- As a preliminary introduction to Captivate, we will record an example demonstration.
- Capturing the Demonstration
 - Create a New Movie (File >> Record or Create New Movie).
 - Choose the type of movie to record. Options are Application, Custom Size, and Full Screen. For this demonstration we will choose Application. (see Figure 3: New Movie Options)

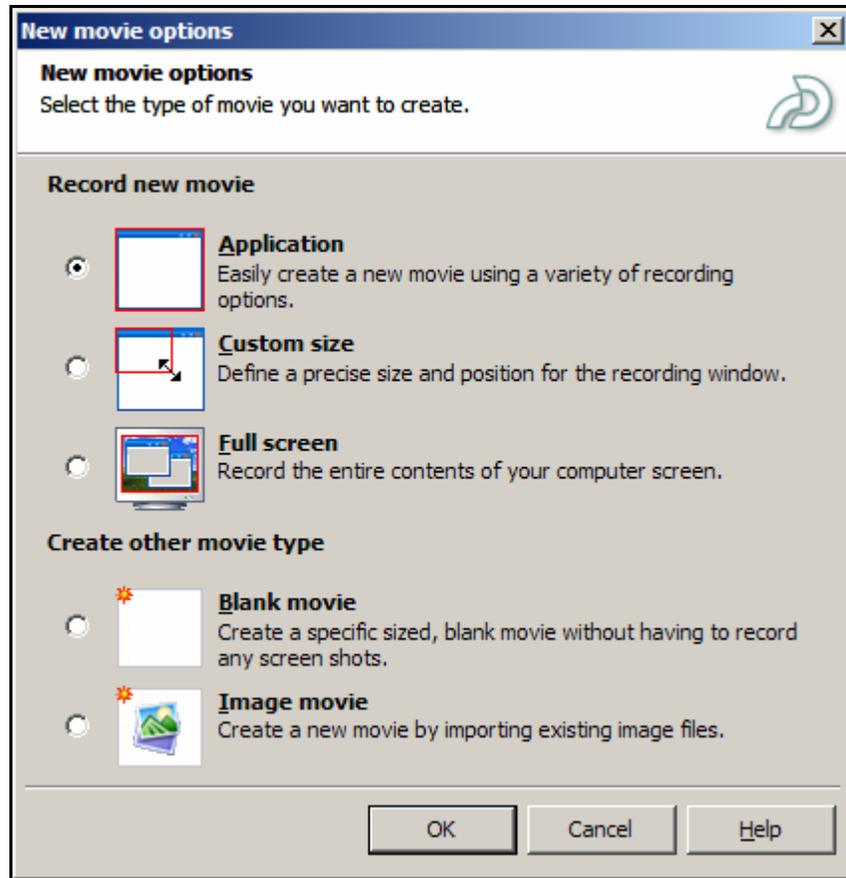


Figure 3: New Movie Option

- o Choose the application you wish to capture (which should be already running) from the 'Record specific window' dialogue and click 'Record'. (see Figure 4: Record Specific Window Dialogue)



Figure 4: Record Specific Window Dialogue

- o This will set the record window (a red rectangle) and begin recording. (see Figure 5: Set Record Window and Begin Recording)

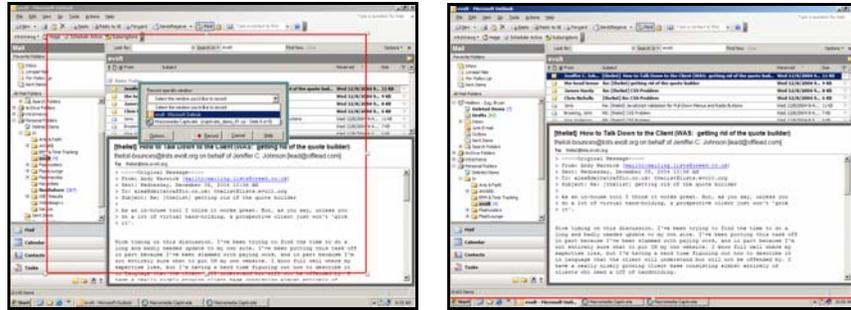


Figure 5: Set Record Window and Begin Recording

- Record the steps in the demonstration. Be sure to listen for the 'picture click' audio that confirms that each step is being captured. Hit the 'Print Screen' button while capturing to manually add a slide of the current capture window.
- Once finished, hit the 'End' button. This will stop the screen capturing process and open the demonstration movie in editing mode. (see Figure 6: Captivate Editing Window)

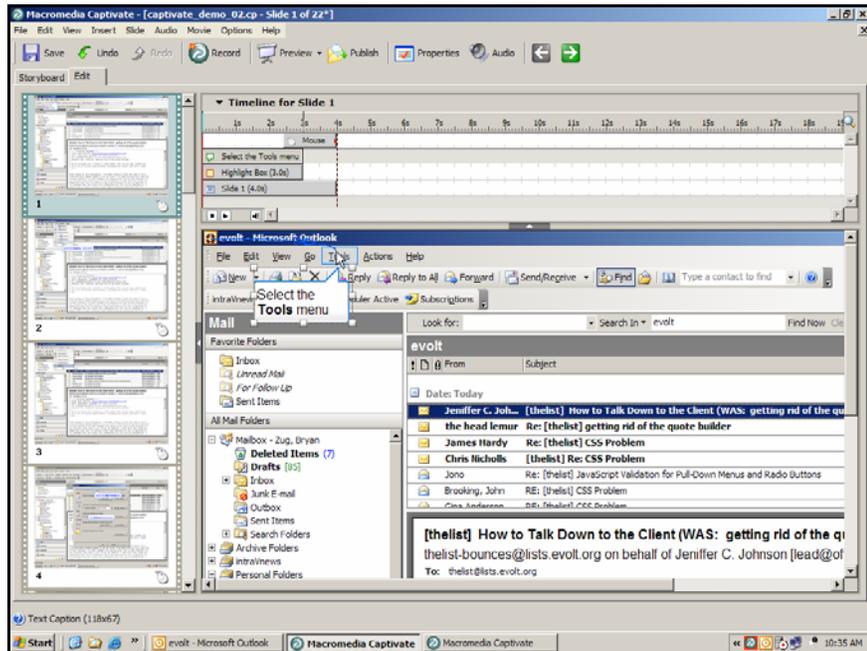


Figure 6: Captivate Editing Window

- Editing a Demonstration
 - Once captured, use the Captivate tools to modify the demonstration's elements. For this short overview, we will look at the Caption, Mouse Animation, and Slide properties editing capabilities.
 - The Caption
 - Double clicking the caption brings up the caption properties which include:
 - The text of the caption. (see Figure 7: Text Caption Text)
 - The timing / display of the caption. (see Figure 8: Text Caption Options)

- The audio for the caption (see Figure 9: Text Caption Audio)

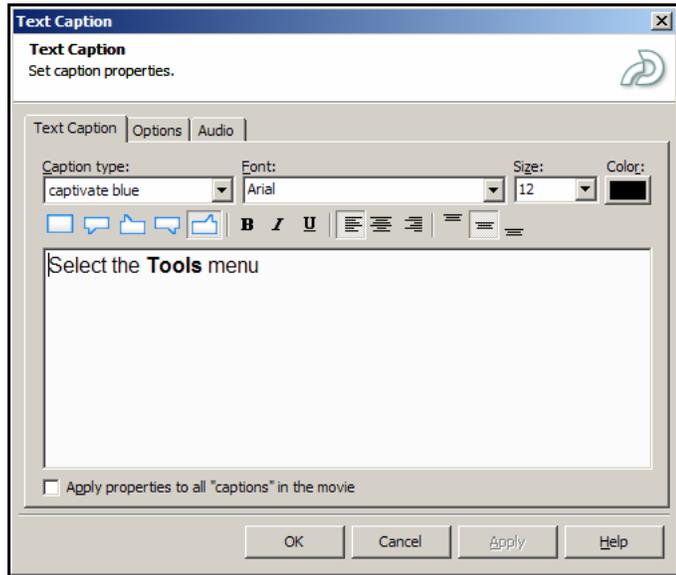


Figure 7: Text Caption Text

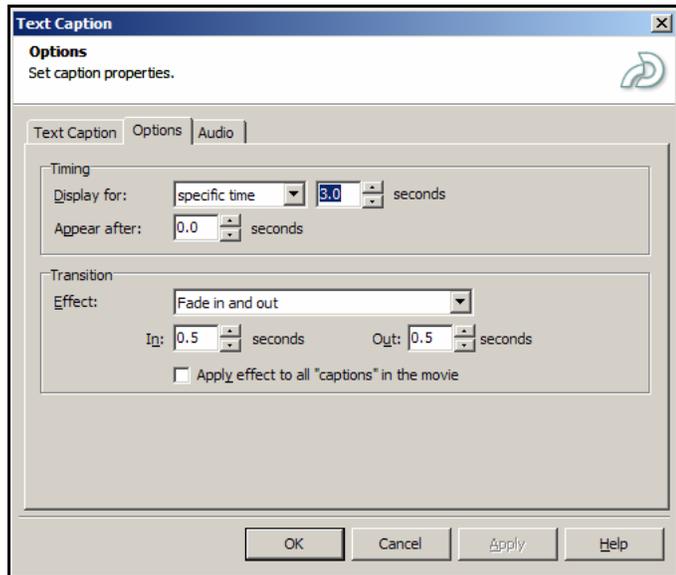


Figure 8: Text Caption Options

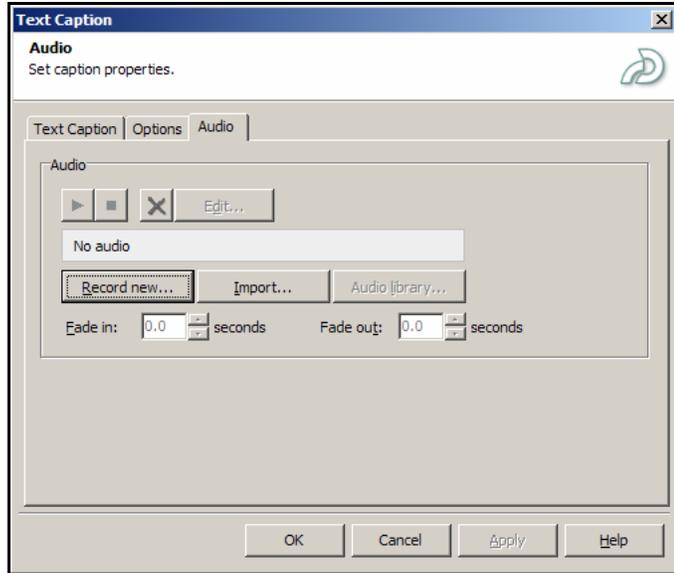


Figure 9: Text Caption Audio

- The Mouse Animation
 - Double clicking the mouse icon on the slide brings up the mouse properties which include:
 - The display and animation of the mouse (see Figure 10: Mouse Display and Animation Options)
 - The timing of the mouse animation (see Figure 11: Mouse Timing)

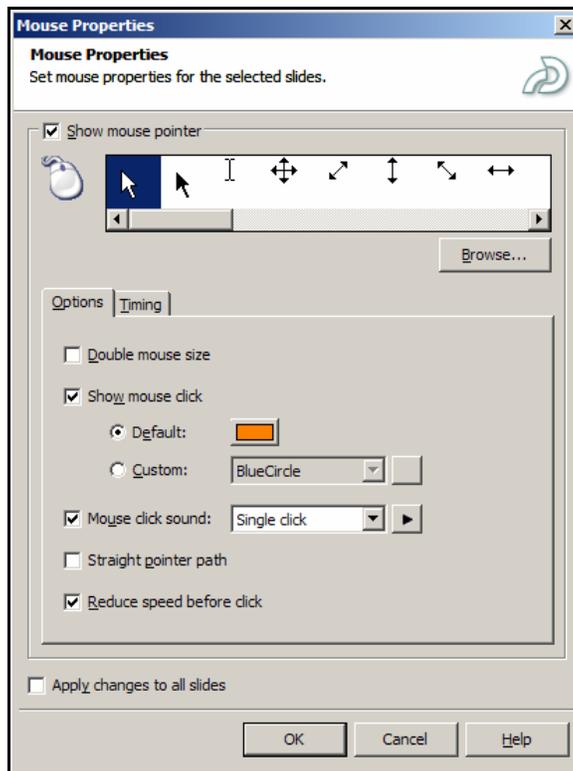


Figure 10: Mouse Display and Animation Options

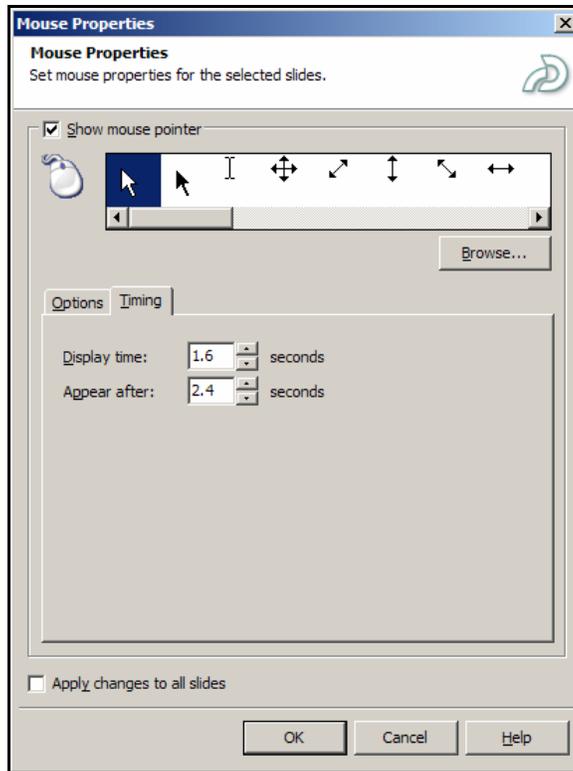


Figure 11: Mouse Timing

- The Slide
 - Double clicking the slide image will bring up the slide properties which include:
 - The display options of the slide. (see Figure 12: Slide Display Options)

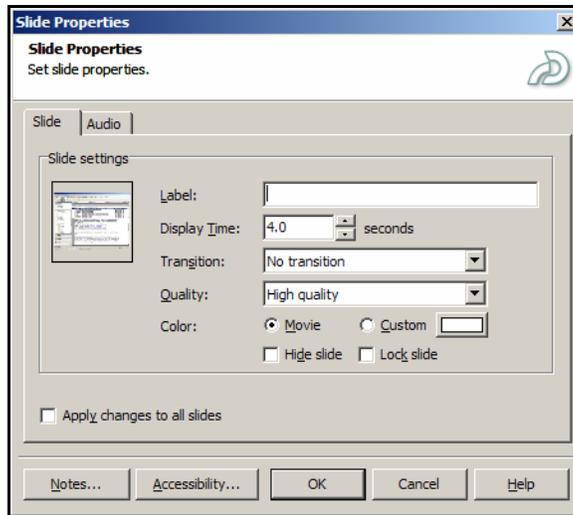


Figure 12: Slide Display Options

- The audio for the slide (see Figure 13: Slide Audio)

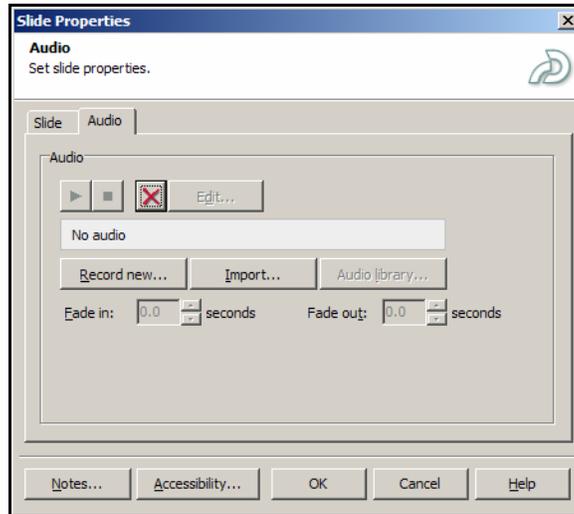


Figure 13: Slide Audio

- Timeline Editing
 - With Captivate, Macromedia introduced timeline editing capability which allows the quick visual adjustment of the presentation elements within a slide. This will look familiar to users of other timeline based tools like Flash, Director, Dreamweaver's DHTML mode, Premiere, After Effects, etc. (see Figure 14: Slide Timeline Editing)

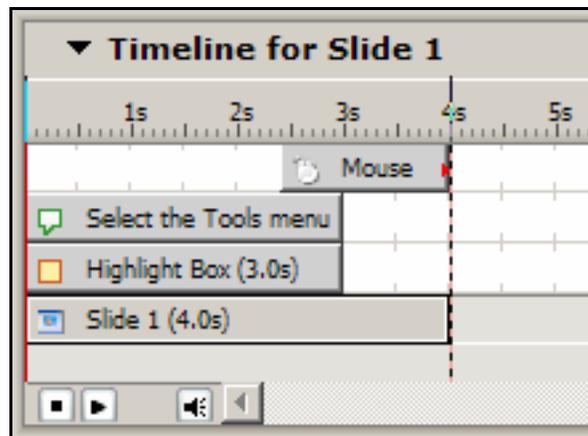


Figure 14: Slide Timeline Editing

- The demonstration can be previewed selecting 'File >> Preview'. Preview options include Play this Slide, Movie, From this Slide, Next 5 Slides, In Web Browser.
- Publishing / Exporting a Demonstration
 - Once editing is complete, the demonstration can be published or exported to another file format.
 - Publish formats include Flash SWF (see Figure 15: Publish as Flash SWF), Breeze, Standalone Executables (Windows, Mac, or Linux), Microsoft Word Handouts (see Figure 16: Publish as Microsoft Word Handout), Email or FTP the file in various formats. (Flash .SWF, Windows or Linux .EXE, Captivate .CP, a compressed Mac .HQX)

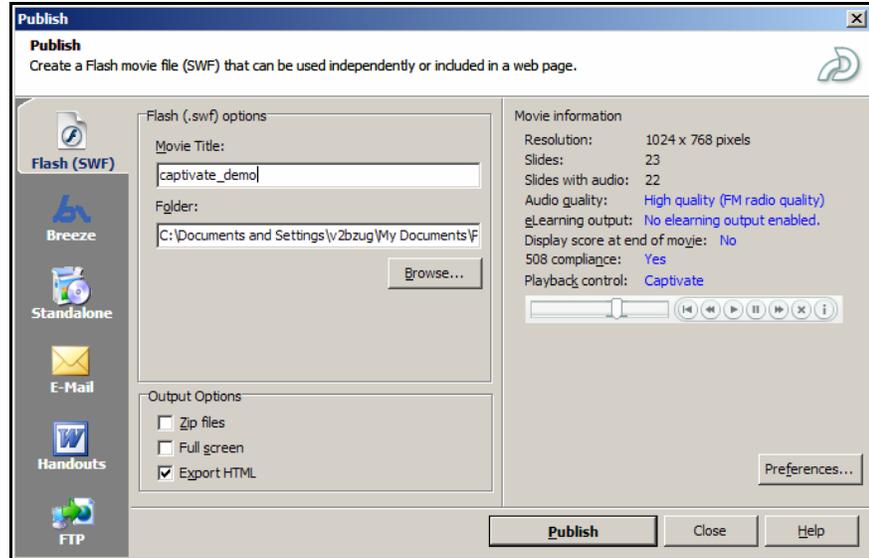


Figure 15: Publish as Flash SWF

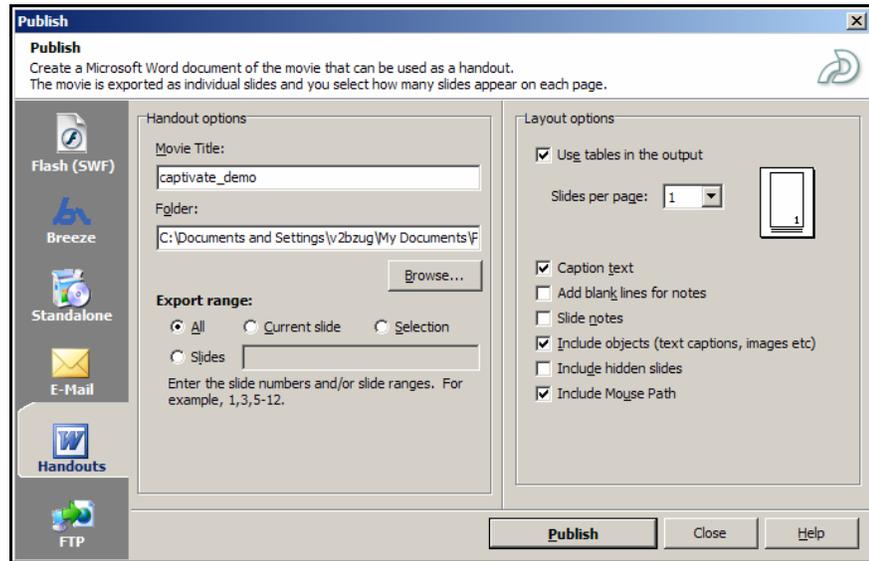


Figure 16: Publish as Microsoft Word Handout

- Export options include 'Export movie captions' and 'Export the movie to Flash MX 2004'. (see Figure 17: Export the movie to Flash MX 2004)

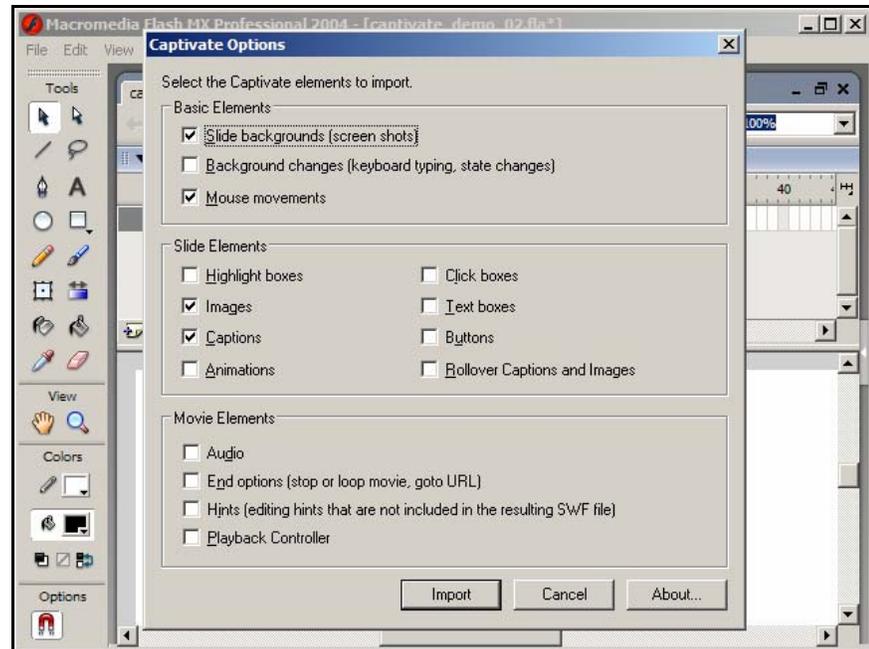


Figure 17: Export the Movie to Flash MX

- **Important Note:** 'Export the movie to Flash MX 2004' requires that Flash MX 2004 be installed! This is actually an import option for Flash MX 2004. It is not what would be considered a traditional export option.
- Captivate's Other Valuable Features
 - Elements

▪ Text Caption	▪ Click Box
▪ Highlight Box	▪ Text Entry Box
▪ Image	▪ Button
▪ Rollover Caption	▪ Animation
▪ Rollover Image	▪ Text Animation
 - Import Formats
 - Movie Captions
 - PowerPoint
 - Slides and objects from other Captivate objects
 - Question Slides

▪ Multiple Choice	▪ Short Answer
▪ True/False	▪ Matching
▪ Fill in the Blank	▪ Likert
 - Audio
 - Recording
 - Waveform Editing

6. Successes, Lessons Learned, Conclusions

- As an inaugural WBT project for Children's Hospital
 - Successes
 - Got the WBT ball rolling.
 - Delivered a complex working simulation WBT with a short amount of resources and time.
 - Was used to as part of blended training for 2500 professional end-users.
 - Project received very well by physicians, nurses, and other staff.
 - Lessons Learned
 - Required more technical resources to build and maintain than originally forecast. Limited technical infrastructure in place to support the type of WBT that was required.
 - Devote more resources devoted to instructional design.
 - Capturing a system that is not finished yet is hard. Very common to these types of healthcare systems.
 - Requires a robust LMS or LCMS for the hospital as an enterprise.
 - Begin with a smaller project accompanied by more rapidly deployable and easily maintainable documentations (e.g. help system).
 - Delivering full screen (kiosk mode) training via Internet Explorer proved to be problematic -- Microsoft's Windows XP Service Pack 2 removed chrome-less kiosk windows without significant notification to developer community. This effectively broke our existing WBT which required significant reworking.
 - Consider long term maintenance plan.
- Captivate (RoboDemo)
 - Successes
 - Allowed rapid prototyping of training.
 - Proved to be easy for non-technical SMEs to use.
 - Easy to learn (even for mega-novices).
 - Easy to edit,
 - Change wording.
 - Cut/paste whole frames (Wow, easy!)
 - Drag and drop to change slide order
 - Easy participation by multiple content reviewers.
 - FLA output allowed completely flexible system design.
 - Simple asset management in a single file.
 - Stage was set for future extensibility (e.g. dropping in Captivate objects into an AICC/SCORM compliant LMS).
 - Lessons Learned

- Customization was difficult for non-developer (i.e. difficult to get different caption bubbles).
 - No robust text formatting functionality (e.g. bullet and numbered lists).
 - RoboDemo 4.5 (released 6/2003) was unstable in many scenarios.
 - Problematic to non-technical users (beyond learning standard multimedia system configuration).
 - Fixed in RoboDemo 5 and Captivate 1.0.
 - RoboDemo 4.5 had an anti-piracy system that broke installation inexplicably during normal installation patterns in ways that could not be corrected.
 - Fixed in current version of Captivate.
 - Word exported .doc slides were too small to read onscreen.
 - This was manually corrected via Word macros and his fully fixed in Captivate 1.0.
 - Right click simulation in Flash was very problematic because right clicks cannot be easily simulated in Flash.
- Conclusions
 - Despite troubling limitations, RoboDemo 4.5 was worth using for our project because of the leverage it provided. We are now employing Captivate 1.0 for new projects.
 - Children's Hospital developed in-house knowledge of technical requirements for creating a multi-tiered long-term enterprise eLearning system for its clinical applications.
 - Highly interactive simulation WBT.
 - Classroom training.
 - Comprehensive user friendly help system.
 - Quick to produce tutorials (results not tracked, exported straight from Captivate to a web server).

7. Questions and Answers

- Questions, comments or further discussion?