Robust SCORM®-Conformant E-Learning Content with Flash and Captivate (RC302W)

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Biography

Aaron E. Silvers
Multimedia Developer,
Concurrent Technologies Corporation (CTC)
- Contributes to the Sharable Content Object Reference Model (SCORM®) 2004.
- Prototypes new SCORM 2004 content examples for Advanced Distributed Learning (ADL).
- Delivers solutions for e-learning content development challenges.

Overview

- Tricks to synchronizing communication with JavaScript from Flash.
- Packaging content for distribution to Learning Management Systems (LMSs).
- Familiarity with the SCORM Run-Time Data Model and testing content with the ADL SCORM 2004 Conformance Test Suite.
- Best practices and debugging help.

What does SCORM® mean to a content developer?

Develop content with the following in mind:
- Accessibility - Content can be identified and located when/as it is needed.
- Adaptability - Content can be tailored to individual and organizational needs.
- Durability - Content doesn’t require modification as software systems change/upgrade.
- Interoperability - Content functions in multiple applications, environments and software/hardware configurations regardless of the authoring tools/platforms used.
- Reusability - Content is independent of learning context, thus can be used in different contexts for different learners.
What does SCORM mean to a content developer?

The SCORM Run-Time Data Model...

• Allows tracking of the learner's experience with your content.
• Common syntax for every SCORM-conformant Learning Management System (LMS).

What does SCORM® mean to a content developer?

The API Instance...

• Exposes the LMS to enable communication with your content.
• Uses only seven different functions for interfacing.

What does SCORM® mean to a content developer?

Your content...

• Responsible for initializing and terminating communication with an LMS.
• Responsible for the evaluation of any activities inside.

Making your content sharable and communicative.

In order to create a sharable content object (SCO), your content must:

• Find the LMS’s Application Programming Interface (API).
• Initialize communication.
• Terminate communication.

Interactivity and data-tracking are optional (as far as SCORM is concerned).

Making your content sharable and communicative.

Content must be packaged for an LMS.

• The Package Interchange Format (PIF).
  • Basically, a .zip file with a certain structure.

• How?
  • Captivate has the functionality built-in.
  • Flash requires some “D.I.Y.”

What Captivate does for you...
Not sure if you wanted this to follow the ADL Style Guide but I believe you only need to use the registered trademark on the first SCORM reference.

seesem, 8/3/2005
What Captivate does for you...

“The EZ-Bake Oven of E-Learning Content.”

• No scripting required
  • If you can do PowerPoint, you can do Captivate

• Automated packaging of content for LMSs:
  • SCORM Version 1.2 **
  • SCORM 2004 **

** Note: This requires at least one learning interaction to be included in the Captivate content.

What Captivate does for you...

Question: What is an “interaction?”

• Answer: An exercise.
  • Multiple Choice
  • True False
  • Matching
  • Fill-in-the-blank.

• Captivate makes this pretty easy:
  • Provides templates to quickly create exercises.
  • Automates the scripting and syntax for your content to work in your Run-Time Environment.

What Captivate does for you...

Question: How easy is it to add an interaction and prepare Captivate content for an LMS?

Answer: Let’s eat our own soup...

What Flash can do for you...

“Roll Your Own E-Learning Content.”

• “Some assembly required.”
  • An API Wrapper to expose the LMS to your content.
  • Reliable communication between Flash and JavaScript.
  • Working knowledge of SCORM Run-Time Environment Data Model.

• Package your content for LMSs:
  • Hand crank XML and use WinZip.
  • Reload Editor 2004, from ADL.
Throughout you have been placing periods at the end of each bullet you should do so here as well to be consistent.

seesem, 8/3/2005
What Flash can do for you...

“Some assembly required.”
• Less work than previously required.

• Your top options in Flash 8:
  • Use the included publishing template for SCORM.
    • Relies on FSCommand.
    • Will only work in Internet Explorer, in a Windows environment.
  • Use External Interface.
    • Works great… in the Flash 8 player.
  • Use the Flash/JavaScript Integration Kit.
    • Open-source.
    • Backwards compatible to Flash 6 player.

What Flash can do for you...

SCORM Version 1.2/2004 Template for Flash:
• Based on the Open-Source Flash/JavaScript Integration Kit.
  • An API Wrapper that auto-detects if you’re in a SCORM Version 1.2 or a SCORM 2004 Environment.
  • Documentation to get you initializing and terminating communication, tracking your learners, tips and better practices.

More Tools to Use...

Testing and Debugging Tools for SCORM content:
• Test-run your content in the ADL Sample Run-Time Environment:
  • Version 1.2.7 for SCORM Version 1.2.
  • Version 1.3.3 for SCORM 2004.
  • Debug and Validate your content for SCORM conformance in the Conformance Test Suite.

Resources

• SCORM Version 1.2/2004 Template for Flash
  http://tb.com
• Reload Editor 2004
  http://www.isai.cmu.edu/adl/scorm/tools/reload/
• SCORM Documentation
  Sample Run-Time Environment
  Conformance Test Suite
  http://www.adlnet.org/

Summary

• Lots of options for rich E-learning content.
  • Captivate = “Easy Bake E-Learning Content.”
  • Flash = “Roll Your Own E-Learning Content.”
• Captivate – Complete publishing, out-of-the-box.
• Flash – Completely customizable.
  • Use the SCORM 1.2/2004 Template for Flash.
  • Use a packaging tool, like Reload Editor 2004.

Developing with the template…

• Initialize and terminate communication from your Flash content.
• Request previous and next SCOs from your Flash content.*
• Send user information to the LMS.
• Dynamically affect presentation based on information from the LMS.
• Any other JavaScript goodness you want to implement
  • AJAX-architected solutions
  • Interaction with other JavaScript/DHTML page components.

* SCORM 2004 only
s10  Delete one of the *
    seem, 8/3/2005

s13  bullet consistency
    seem, 8/3/2005
Thank you.