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THIS WEEK — DEVELOPMENT TECHNIQUES

Tutorial: e-Learning with Flash MX 2004

BY PAUL CLOTHIER

Flash® has long been used as a tool to create animation, rich-graphics and interactivity on the Web. It's often used in the development of e-Learning, but usually by Flash gurus steeped in ActionScript, under the direction of instructional designers. The learning curve has always been steep and the use of Flash by the average online course developer or instructional designer has been rare.

With Flash MX, and particularly with Macromedia's latest release of that tool, Flash MX 2004, this has changed. Macromedia realized that they have a potential base of users (read customers) that they could leverage if only they could make the product a little easier for e-Learning developers further down the food chain to use. Flash MX 2004 attempts to do just that — make the development of e-Learning in Flash simpler, more intuitive and more accessible to the e-Learning course developer masses.

Macromedia has achieved this by adding some new features, such as templates and components that can be used as the building blocks of e-Learning. The most interesting of these additions are forms-based authoring, learning interac-

tions, user interface (UI) components and quiz templates.

The new features in Flash

This article is primarily a step-by-step tutorial to show you how to create e-Learning content with the new Macromedia Flash MX 2004. I will briefly address some of the new features and then dive into a "how-to" for a small Flash e-Learning demo. The demo is not designed to be an example of either a complete e-Learning project or a demonstration of great instructional design. It's meant to quickly show you some features of Flash MX 2004 that allow it to be used by a non-expert to create some impressive, interactive e-Learning.

Continued on next page

The latest version of Flash MX has been specifically designed for the instructional designer or subject matter expert who has no experience with Flash or with ActionScript. Here is a fast tutorial that will introduce you to the main features so that you can start using this tool in your e-Learning projects right away!

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Forms-based authoring

One of the challenging aspects of learning Flash has been gaining an understanding of how to use timelines, frames and keyframes. Macromedia has now introduced a forms-based metaphor that allows you to design content on forms and then to move between these forms. (Figure 1, right, shows a simple forms heirarchy.) With the use of built-in slide show templates, this can be likened to creating e-Learning content in a PowerPoint presentation and moving between slides. This is by far my favorite feature — I find it so much easier to think in terms of moving between content in forms, rather than figuring out the change of content over time.

The learning interactions

In previous versions of Flash you could create questions, quizzes, drag and drop interactivity, embedded video, etc. However, because doing these things was somewhat complex and a little painful for the newbie user like you and me, Flash gurus were usually brought in to code that kind of work. The good news with this latest version of Flash is that Macromedia has created a library of learning interactions so that you can drag and drop one of them on the stage (the working area), configure the interactions and text you want, and bingo it's done. (Figure 2, below, shows an example of the stage (on the right) and a learning inter-

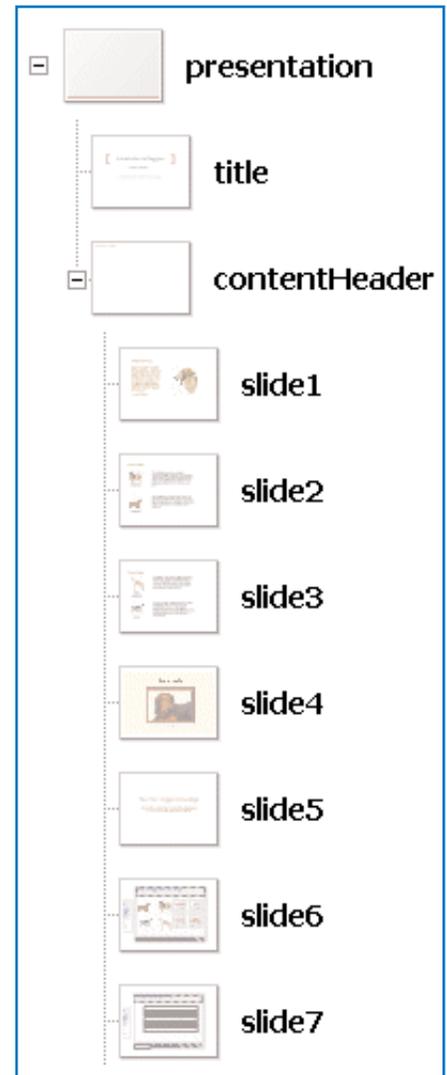


FIGURE 1 Forms-based authoring

Drag each dog

Drag and Drop Interaction

1. Select Menu Modify > Break Apart.
Note: Only perform "Break Apart" once per interaction movie clip.
2. Deselect (Ctrl+Shift+A) the pieces.
3. Click on this panel. Select Menu Window > Development Panels > Component Inspector.
4. Enter the desired parameter values for this instance.
5. Publish movie to see the results.



FIGURE 2 Using learning interactions

action instruction set (on the left.)

The interactions include Drag and Drop, Fill in the Blank, Hot Objects, Hot Spots, Multiple Choice questions, and True or False questions. In five minutes you can develop interactivity that previously would have taken you hours, even if you knew what you were doing.

The UI components

The last of what I think of as the new “big three” elements are the UI components which are basically an easy way to add advanced functionality to a Flash project. You can drag and drop components such as buttons, check boxes, combo boxes, radio buttons, menu bars, and many more right onto the stage and very easily configure them and add behaviors. (Figure 3, right, shows a list of user interface components.)

Quiz templates

These are templates provided by Macromedia that allow you to create and configure six different types of quiz questions. (See Figure 4, below.) You can use this template to create any type of interactive quiz or test you wish and automatically get a score calculated and displayed. (I haven’t included the quiz templates in the demo but you can find them under File > New > Templates.)

SCORM and AICC

All the learning templates and learning objects that are created in Flash MX 2004 allow for out-of-the-box SCORM/AICC compatibility for use within an LMS. If you need more information on this or on any of the learning interactions, take a look at the PDF at: http://www.macromedia.com/support/flash/applications/learning_interactions/

What you’ll need to create the e-Learning demo

First you’ll need to download Flash MX 2004 Professional at <http://www.macromedia.com/software/flash/> and click on “Try” Flash MX 2004 Professional. You’ll get a 30-day trial. (*Editor’s Note:* These are very large files, and you can expect it to take several hours to download them if you are on a dial-up connection.)

Then, go to www.fhoton.com/ FlashDemo and download the Flash-Demo.zip file. This file includes all the content you’ll need to build the demo. Take a look at eLearnDemo1.swf — it’s the final result you are going to create in this tutorial.

Next, if you are a complete beginner with Flash, you need to spend a little time playing around and getting used to some of the basic menus, ideas and terminology. At the first URL listed above you can choose the “How do I use Flash MX 2004?” link. It’s quite long but you can fast forward to the basic menus and user interface section. I also recommend that you familiarize yourself with Flash Help in case you need it. (And here’s a tip — use the <Ctrl> key and the mouse scroll button to increase the size of the Help text. The default size can give you a headache.)

If you have already used Flash at least once or twice before then I would move right along to the tutorial that starts on page 4.

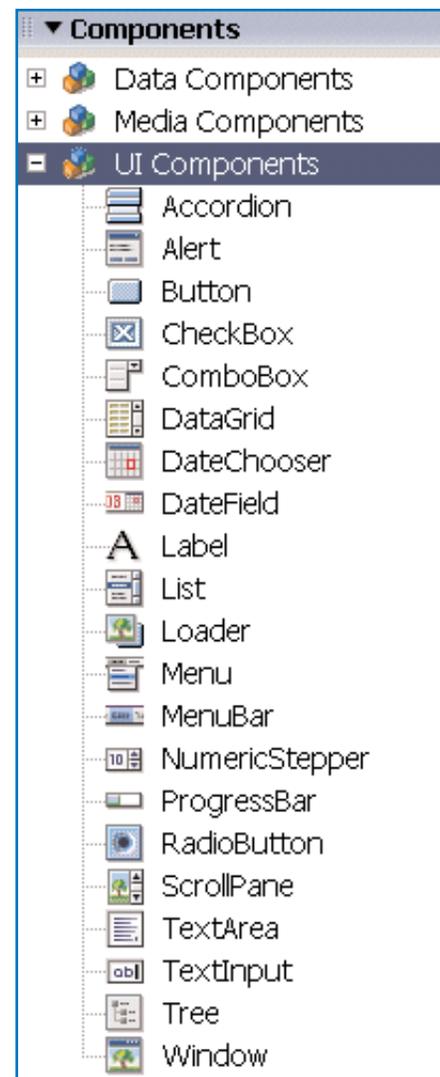


FIGURE 3 The new UI components

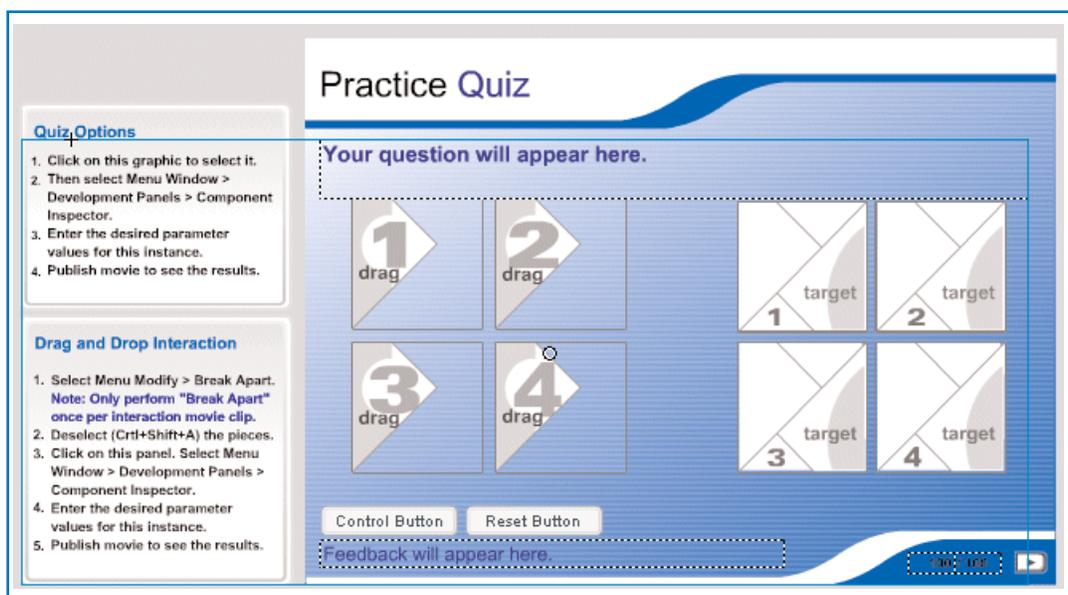


FIGURE 4 Quiz templates

Step-by-step tutorial

This should take you about 60 to 90 minutes to create once you have downloaded and installed Flash on your system.

The “Introduction to Doggies” e-Learning demo

A. Setting up the slides

The first step is to set up the movie file and the slides.

1 Choose *File > New > Templates*.

Choose *Slide Presentations* from the *Category list* and select the “*Sharp Presentation*” template.

You can zoom in and out with *Ctrl + or -* or choose the drop-down at top right to adjust the zoom percentage. *Fit in Frame* is a good one to use.

Notice the forms/slides-based metaphor here.

Take a minute to check out the screens on the left-hand side panel. Click on them and take a look. Notice the outline structure of the screens, the hierarchy.

Any nested screen inherits the characteristics of its parent. Any child screen under the “*contentHeader*” screen will have the content appear. In this case the “*My Company*” header will be present on all the child screens below. You can think of this screen as being similar to the slide master in Microsoft PowerPoint.

2 Go ahead and delete all the screens below the *contentHeader* screen. (Multiple select with *<Ctrl hold>* and press *delete*.)

These are just sample screens with content that Macromedia provides.

3 With the *contentHeader* screen selected right-click and choose *Insert Nested Screen*.

A new slide named *slide1* should appear. If it is not labeled *slide1* simply double-click on its name and rename it to *slide1*.

4 Highlight this new *slide1*, right-click and then choose *Insert Screen*. Insert eight more screens.

We don’t want to nest under *slide1* — we want them all at the same level. You should end up with *slide1* thru *slide9*.

5 Save your Flash file (.fla extension) and call it *e-LearningDemo*.

The working Flash files are .fla files and the exported (compiled) Flash files are .swf files.

6 Select the *Title slide* and change the title to “*Introduction to Doggies*” and add two *doggie-related* subtitles.

Use the *Text Tool* to select a text box and then edit the text. Change font size if you wish by selecting text and then clicking the font size drop-down in the *Properties panel* at the bottom.

To de-select any text in a text box press the *<Esc>* key. The text box will then have a blue outline. The arrow keys can then be used to move and fine-tune the position of the text box.

If you wish to add any graphics to this or any screen choose *File > Import*.

7 Select each of the large square brackets with the *Selection Tool* and delete them.

Keep them if you wish, but I feel it looks cleaner without them.

8 Select the *contentHeader slide* and change the title at top left to “*Introduction to Doggies*.”

Get rid of the brackets if you feel inclined to.

9 Select the *presentation slide*, select the two “*previous*” and “*next*” icons and move them off to the bottom right of the brown footer.

Notice when you move elements on the stage that alignment guidelines appear to make sure that the elements are aligned correctly. Nifty, eh?

10 Let’s test the “*movie*” now by choosing *Control > Test Movie*. When the movie screen appears click on the “*next*” button and make sure it takes you to the next slide.

You can also use the keyboard shortcut *<Ctrl> <Enter>*.

11 Close this preview screen.

Right-click on tab or the close window icon top right.

B. Adding basic content

Ok, now we will add content to each of the slides.

1 Select *slide1*.

2 Open the Word file *DemoContent* and select the text and graphic “*Making People Happy*” on page 1 of the document.

This is in the zip file you downloaded.

3 Copy the text and graphic from Word and paste onto *slide1* in Flash. Align as necessary.

You can right-click the slide in Flash and choose *Paste*.

I have provided content in this form in Word to save time writing and formatting text in Flash, as well as importing graphics. If you feel inclined to write your own text, use the *Text Tool*. I have provided all the doggie graphics in .gif form should you wish to import them individually.

When importing graphics and other media you are given a choice to *Import to Stage* or *Import to Library*. *Import to Library* should be used if you wish to use the media elements more than once in your project. You can then drag and drop them from the *Library panel* onto the stage.

4 Select *slide2*.

5 Copy and paste the contents of page 2 of the Word document onto the slide as outlined above.

6 Select *slide3*.

7 Copy and paste the contents of page 3 of the Word document onto the slide.

8 Go ahead and test the movie with *<Ctrl><Enter>*.

Navigate through the pages and check out your work. Cool, eh?

9 Leave *slide4* blank for now. We will return to this later and add content.

C. Add a drag and drop quiz slide

In this step, we will use one of the learning interactions to create a simple quiz.

1 Select slide5.

2 Use the Text Tool to add a title: “Test your Doggie Knowledge” and a subtitle: “Answer the questions on the following pages to see how much you have learned.”

This is a title page to introduce the following quiz slides. Choose appropriate font sizes.

3 Select slide6.

4 From the Flash drop-down menu choose Window > Other Panels > Common Libraries > Learning Interactions.

The learning interactions panel with its associated assets will appear on the right.

5 Drag and drop the “Drag and Drop” asset onto the slide.

You’ll see a large rectangular frame and a smaller rectangular frame with instructions in it.

6 Center the larger rectangular frame on the slide.

The smaller rectangle with the instructions on it will not appear when the movie is run.

7 Select the Drag 1 element and delete it.

You may need to click or double click a few times to select the element. Make sure you select the whole element and delete it all. We will replace this element with a doggie jpeg.

8 Choose File > Import > Import to Stage and choose the dachshund.jpg image.

This is one of the unzipped files in your Demo directory. (You could choose Import to Library if you think you will use these images more than once.

9 Place the dachshund graphic where the Drag 1 element was.

10 With the dachshund selected choose Modify > Convert to Symbol. Give it

the name “Dog1” and the behavior “Movie clip”.

A symbol is a Flash reusable object. Repeated instances of symbols do not increase the file size.

11 In the Properties panel below the stage, click where it says <Instance name> and type in “Dog1”.

You need an instance name for the symbol to be able to refer to it.

12 Now scroll to the left — off the slide so you can see the Drag and Drop Interaction rectangular frame.

13 Select this and you should see a Launch Component Inspector button in the Properties panel.

14 Click this Launch Component Inspector button.

The Component Inspector panel will appear. This will allow you to configure the Learning Interaction component.

15 Choose the Parameter tab and change the first Drag Object Name to “Dog1”.

This is the instance name of the dachshund graphic symbol.

16 Close the Component Inspector window.

17 Now repeat the whole process again from step 7 above for each of the doggie jpegs.

The same process but using the names Dog2, Dog3 and Dog4 for the Borzoi, Chihuahua and Italian Greyhound.

18 When you have repeated the process for all doggie jpegs change the wording of the question as needed.

Something like, “Drag each doggie to the correct target.”

19 Test the movie with <Ctrl> <Enter>

Navigate to the appropriate slide, “drag-and-drop” and click “Check Answer.” If you have problems, carefully check your symbol and instance names and the names within the Component Inspector window.

D. Add a multiple choice quiz

Now that you have an idea of how to use a learning interaction, creating a multiple choice quiz should be straightforward.

1 Select slide7.

2 Drag-and-drop the “Multiple Choice” Learning Interaction asset onto the slide and position it.

This is the same idea as the Drag and Drop asset.

3 Select the smaller rectangular frame and press the Launch Component Inspector button.

4 Under the Parameter tab add your doggie question and add possible answers in the Label column.

Something like, “Which are characteristics of the Borzoi?” and give five possible answers.

5 Click the check boxes to denote correct answers.

6 Close the Component Inspector panel and test the movie with <Ctrl> <Enter>.

Navigate to the appropriate slide and test the multiple choice question.

E. Add a fill in the blank quiz slide

Again, this is very straightforward and uses another learning interaction.

1 Select slide8.

2 Drag and drop the Fill in the Blank Learning Interaction asset onto the slide and position it appropriately.

3 Select the smaller rectangular frame and press the Launch Component Inspector button.

4 Add a question and the correct possible responses.

5 Check the correct box alongside the correct answers.

6 Close the Component Inspector panel and test the movie with <Ctrl> <Enter>.

Getting the idea? Pretty cool eh? (If you feel like it you can add extra

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slides later and play around with the Hot Objects, Hot Spots and True or False learning interactions.)

F. Add hyperlink to a website

We will add content for a final slide and create a link to a website.

- 1 *Select slide9.*
- 2 *Copy the text and graphic on page 4 of the Word file and paste into slide9. Align as necessary.*
- 3 *Carefully select the last line of the text — "Dog Breed Info Center" with the text tool.*

You may need to click or double-click a few times to select just this text.

- 4 *Make sure the Properties panel is expanded to show the URL link entry box.*

This can be done by clicking the down arrow, at bottom right on the Properties panel.

- 5 *Type in the complete URL "http://www.dogbreedinfo.com"*

- 6 *Test the movie and see if the link is working. <Ctrl> <Enter>*

G. Embed Flash demos in Flash

It is often useful to be able to include a tool simulation within an e-Learning program to show the learner how to use a piece of software. We will use a short Flash simulation demo that was created with RoboDemo®.

- 1 *Go back and select slide4.*
- 2 *Choose File > Import > Import to Library and select the Doggie.swf file.*
This is the short Flash tool simulation created with RoboDemo.
- 3 *Drag and drop the Doggie.swf file from the library onto slide4 and position it centrally.*

Choose Window > Library if the panel is not showing.

4 Test the movie.

You should see a Flash simulation running when you navigate to slide4.

Audio and video

Adding audio narrative and embedding video clips is also straightforward. It's just a question of importing them to the stage or library and using them like any other asset. Take a look at VideoClip.fla for an example of adding a video clip to a slide.

Closing

I hope this has given you a taste of how it's possible to use Flash for some e-Learning projects without needing to bring in the "Flash heavies." If you want highly sophisticated Flash interactions in your e-Learning, and you need to tie in with your LMS, then there's no substitute for using Flash experts who live and breathe timelines and ActionScript. If your needs are less demanding, then hopefully this tutorial will have given you the confidence to create some of your own Flash-based e-Learning and realize it's not as scary as you once thought. 

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Additional information on the topics covered in this article is also listed in the Guild Resource Directory.



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