



CASE STUDY

Michigan State University

Michigan State University uses Macromedia Flash® and Flash Communications Server to breathe new life into teaching and learning American History.



Customer Profile

Name:

Michigan State University

Industry:

Higher Education

Location:

East Lansing, MI

Size:

45,000 students, plus faculty and staff

URL:www.easehistory.org**Technology Solution:**

Macromedia Flash®

MSU Cognitive Flexibility Laboratory

Michigan State University's main campus is located in East Lansing, Mich., just three miles east of the state capitol. The university is home to nearly 45,000 students, served by 4,500 faculty members and staff. It is nationally known for more than 200 programs of study, and supports a wide variety of research centers and laboratories. The university's Cognitive Flexibility Laboratory, directed by Professor Rand Spiro, explores how computers and multimedia can support learning in complex domains.

The Challenge

In the summer of 2003 members of the Cognitive Flexibility Lab began brainstorming ways to create a technology-mediated learning environment that could hold different types of content. Their goal was to create a platform to explore Spiro's notion that cognitive processes involved in learning complex subjects are multidimensional phenomena that are effectively supported and enabled by networked computer technologies and digital multimedia. Spiro is the originator of Cognitive Flexibility Theory, an approach to computer-based learning and instruction designed to promote the mastery of difficult but important ideas and the development of adaptively applicable knowledge—understandings that can be used in “messy” real-world situations.

Brian Collins, an MSU doctoral student and member of the lab, wanted to apply Professor Spiro's ideas to his own first love: History. As a former history teacher, he knew first-hand that traditional lecture-recitation teaching methods often left students with little appreciation for this complex domain and ill-prepared to apply historical understanding to new situations.

One day, while watching a documentary on U.S. political campaign ads at home, he came up with the idea to use campaign ads as a means of actively engaging students in the study of American History. “I realized that campaign ads would be a great entry point for kids to learn about historical context,” says Collins, “and working with ads and historical clips in an interactive learning environment might even stop students from falling asleep in classes.”

The Solution

Collins and his colleagues created a website for sharing multimedia learning resources with teachers and students of US History. EASE History now includes hundreds of historical videos and photographs, and features an interface that can display video clips and images side by side for comparison, analysis, and discussion.

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“With history, it’s important to create a really engaging environment, and Flash makes this possible.”

Brian Collins
PhD Candidate
Michigan State University
Cognitive Flexibility Laboratory

EASE History is a specific application of the more general EASE System (Experience Acceleration Support Environment). The EASE System began in early 2003 and is the latest in a 20-year series of hypermedia learning environments based on Cognitive Flexibility Theory developed under Spiro’s supervision.

In pursuing the project, several requirements were at the top of Collins’ list: The video clips would need to play seamlessly inside any browser. Ideally, there would be no pop-ups or large client downloads. The huge library of video and static content needed to be database-driven and easy to maintain. The system would have to be easily modified and expanded for use in a variety of content areas. The team also needed a user interface that could simultaneously display multiple videos to encourage users to search for themes and draw comparisons among them.

“After evaluating several solutions, we knew we had the perfect match with Macromedia Flash. It’s cross-browser compatible; it has outstanding video capabilities; and it’s a proven supported technology that plays well with other platforms. The ubiquity of the Flash Player also influenced our decision,” says Aparna Ramchandran, the lab’s multimedia developer. Additionally, the team chose Macromedia Flash Communications Server as its server-based platform for deploying the web-based audio and video application.

The Results

EASE History launched in the fall of 2004, just in time for the November U.S. presidential elections. The first version of EASE History only had one entry point into the material: Campaign Ads. The current version of EASE History has three entry points: Campaign Ads, Historical Events, and Core Democratic Values. The three organizing themes are interdependent and supportive. Students can better understand the complexities of campaign issues and their historical context by looking at associated historical events, develop deeper understanding of historical events by looking at campaign ads and core values, and explore the meanings of core values by examining how these values have been applied in both historical events and campaign ads. The richness of the learning that results derives in part from the ability to apply varying conceptual or thematic perspectives to the same material. Each organizing theme has its own themes and sub-themes. The Historical Events menu includes such diverse topics as Civil Rights, the Environment, and the Cold War.

EASE History is currently being used in K-16 classrooms worldwide to teach U.S. History, Political Science, American Studies—even English as a Second Language (ESL). Collins says teachers embrace the site because they find it user friendly, engaging, and a good fit with classroom learning goals.

One example of how EASE History can be used in the classroom is to help students better understand “justice”. The class can view multiple clips that have been coded on “justice” then discuss how this core democratic value has been applied in different ways from 1900 to the present. “No ‘textbook definition’ of the complex concept of ‘justice’ can prepare students to use that concept in the great variety of contexts in which it occurs—the EASE History approach is designed to show students the ‘ins and outs’ of applying this core democratic value in a way that is tailored to the actual circumstances of historical events,” says Spiro. Furthermore, the program does so in a way that makes these complexities easy to learn.

Also, EASE History makes it clear how concepts that might usually be treated as separate are, in fact, interconnected in practice. For homework the teacher may ask students to search on “justice” and another theme (“equality”, for example) and prepare an argument that these themes are interdependent based on the video examples they have uncovered with the program’s help.

Using rich digital media to help learners draw associations between events is perhaps the site’s most powerful attribute. To support this, streaming video clips and still images are coded on multiple themes, allowing for an almost infinite number of associations. “One teacher said the flip-flopping ad that was put out against Kerry was nearly identical to another flip-flopping ad made against Nixon. It’s easy to show that in the system,” says Ramchandran. Resources are available through clips. These resources include: related clips, interview clips, artifacts, and learning segments.

Because the site is database-driven, Collins can add content himself without any additional programming assistance. He continues to add to the learning guide as well as adding archival photographs and streaming video files.

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