ADDING INTERACTIVITY TO WEB-BASED INSTRUCTION

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INTERACTIVITY

Rick clicks through his course website. He scrolls through various pages of content, and occasionally clicks on an icon that sends him off to another website. Michelle navigates through her course website stopping to explore a virtual reality movie and tests her knowledge with a drag and drop activity. In which of these scenarios was the student more engaged with the content? In Michelle's case, she was not just reading, clicking, and scrolling, but was actively participating and working with the content. Rod Sims suggests "It is no longer adequate to see our field of practice. . . .being limited to products where interactivity is trivialized to simple menu selection, clickable objects or linear sequencing" (Sims, 1999, p. 1). Damarin (1982) identified several descriptions of interactivity, such as finding, doing, using, constructing, and creating. Merely placing course content on the web as opposed to delivering it in the classroom does not make for true interactivity. Using tools such as QuickTime movies, virtual reality movies, and dynamic web pages, web-based instruction can become a more meaningful educational tool.
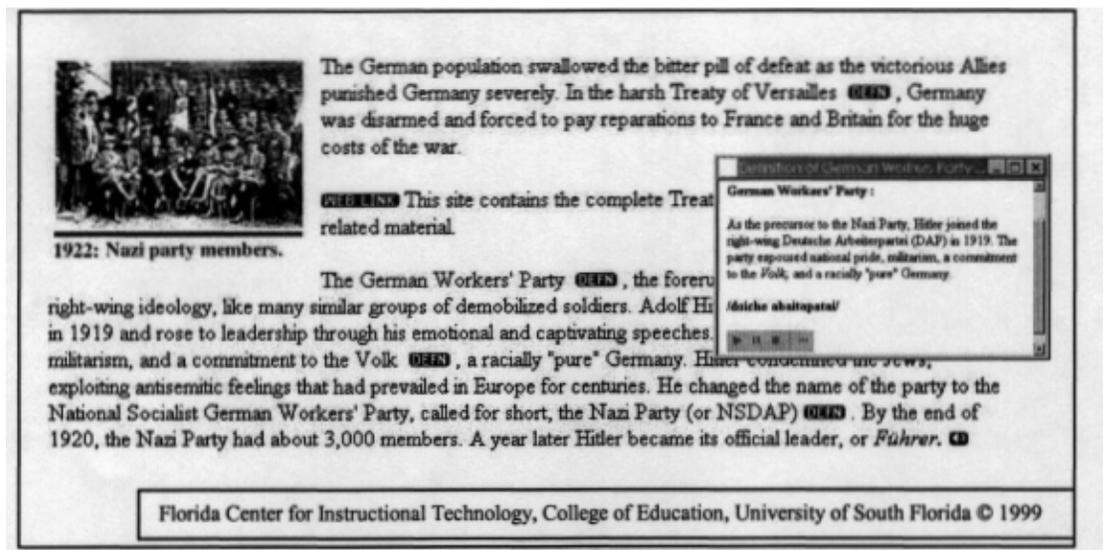
DYNAMIC HTML AND JAVASCR1PT

Dynamic HTML allows for the division of a web page into sections called layers, which are defined by coordinates. Using these coordinates, activities can be created that involve path-based animation. Layers can also be used to create activities in which a student clicks and drags various elements on the page to specified positions. Based on the placement of the elements, appropriate feedback can be given. JavaScript is an easy-to-learn scripting language that enables creation of activities that have responses such as pop-up boxes, status bar messages, and validation and feedback based on form data. Software packages are becoming more widely available that will generate JavaScript for you, within an HTML editing program. Without such a program, JavaScript can simply be inserting into a text-based HTML document.

In order to be interactive, an instructional website must respond individually to student actions. For example, the original glossary section in *A Teacher's Guide to the Holocaust,* produced by the Florida Center for Instructional Technology, provided links from content pages to a multi-page glossary. Clicking on a linked word in the text would send users to the top of the glossary. They would then have to scroll through the glossary to find the word for which they were looking. To make the glossary feature more interactive, JavaScript was used to create a pop-up window that displays the specific glossary term that was clicked on from a content page. In addition to the text definition, an audio file with the pronunciation of the word automatically plays when the term is selected. The sound can be controlled by the user, played multiple times, played

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slower, or played in individual segments. The new interactive glossary feature is shown in Figure 1.

Figure 1. Interactive glossary from *A Teacher's Guide to the Holocaust*

The German population swallowed the bitter pill of defeat as the victorious Allies punished Germany severely. In the harsh Treaty of Versailles **WEB**, Germany was disarmed and forced to pay reparations to France and Britain for the huge costs of the war.

WEB LINK This site contains the complete Treaty related material.

1922: Nazi party members.

The German Workers' Party **WEB**, the foreru right-wing ideology, like many similar groups of demobilized soldiers. Adolf Hi in 1919 and rose to leadership through his emotional and captivating speeches. militarism, and a commitment to the Volk **WEB**, a racially "pure" Germany. Hitler condemned the Jews, exploiting antisemitic feelings that had prevailed in Europe for centuries. He changed the name of the party to the National Socialist German Workers' Party, called for short, the Nazi Party (or NSDAP) **WEB**. By the end of 1920, the Nazi Party had about 3,000 members. A year later Hitler became its official leader, or *Führer*. **CD**

Definition of German Workers' Party...

German Workers' Party :

As the precursor to the Nazi Party, Hitler joined the right-wing Deutsche Arbeiterpartei (DAP) in 1919. The party espoused national pride, militarism, a commitment to the *Volk*, and a racially "pure" Germany.

/doiche abaitapatai/

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QUICKTIME

QuickTime is a cross platform multimedia technology that has been developed by Apple Computer and is available as a free download. QuickTime is an enabling technology that allows for the handling of music, video, sound, text, graphics, animation, and virtual reality scenes.
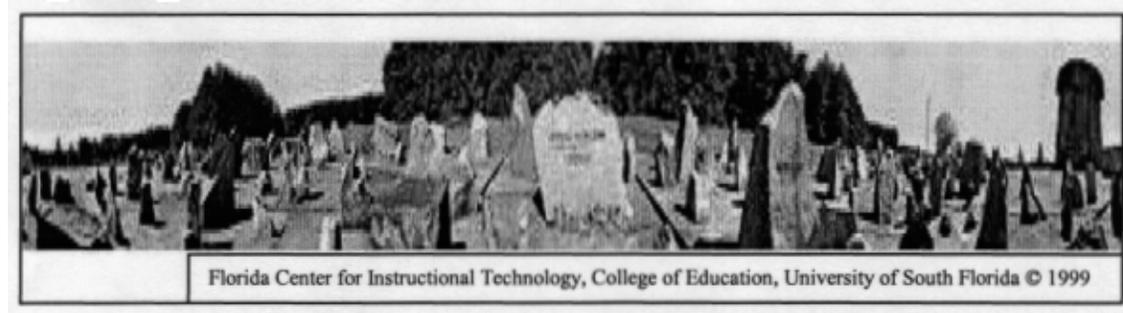
With sprite animation or wired movies, it is possible for the user to truly interact with the animation. When describing sprite animation it can be compared to a theater that includes a cast of characters. The actor that performs on the stage is called a sprite. This actor is able to move, change appearance and even interact with other characters on the stage. Like in theater, there is a background for the play's set and it may be a solid color, and image or a combination of images. A sprite will have properties that describe its location and appearance at a given point time on the stage. In fact, during the course of the animation, it is possible to change its properties so that it can be modified to even change its appearance.

Totally Hip's LiveStage is a multimedia authoring tool based on a scripting language called QScnpt. This scripting language is what makes it possible to create interactive QuickTime movies within any media that supports QuickTime. The QScript tells the movie how to respond to user input, as well as executing events at specified times. In addition to QScripts, LiveStage has a Stage Window that contains all of the images that are involved in the movie and are assigned a sprite name as they are placed on the stage. The Object Window contains the images, paths and sounds that can be incorporated into the sprites. It is in the Objects Window that paths and sounds are created, and where sprites can be expected. The Media Library is the place to view and access media resources, in the programmer is able to drag and drop objects into a movie project.

QuickTime Virtual Reality (QTVR) allows for the creation of panoramic movies in which the viewer is placed "within" the scene. The viewer can move

left, right, up or down, can zoom in or out, and can pick up objects and view them at all angles. Figure 2 shows a QT\TR from *A Teacher's Guide to the Holocaust* in which a user can experience the Treblinka memorial.

Figure 2. QT\TR movie of Treblinka from *A Teacher's Guide to the Holocaust*

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In the examples discussed, the web pages are not merely presenting pages of content for users to scroll through. They have been designed with added functionality that enables individual responses based on user actions. The tools required to create interactivity may be a little more difficult to learn, but the benefits they bring to the educational experience make their use worth the effort.

ONLINE RESOURCES

JavaScript Resources:
http://www.infohiway.com/javascript/indexf.htm http://www.builder.com http://www.javagoodies.com

QuickTime Resources:
http://www.quicktime.com http://www.ultralab.anglia.ac.ukIullI
http://cdi.byu.edu1examp1es/guicktime/index.htm1
http://users.skynet.be/livesite/pages/home.html http://www.totallvhip.comlmain.html
http://www.smallhands.coml

REFERENCES

Florida Center for Instructional Technology. (1999). *A Teacher's Guide to the Holocaust.* [Online]. Available: http://fcit.coedu.usf.edu/holocaustl.

Damarin, 5. (1982). *Fitting the tool with the task: A problem with the instructional use of computers.* Paper presented at the annual meeting of the American Educational Research Association, New York.

Sims, R. (1999). Interactivity: A forgotten art? *Instructional Technology Research Online.* [Online]. Available:
http://www.gsu.edul—wwwitr/docs/interactl.