

was soon linked to various other ESL sites. Readership grew almost overnight to more than 100 readers per day from more than 40 different countries.

Preferences for Audio Formats

The multimedia aspect of *EX*CHANGE* is unquestionably popular with our readers; however, we are not yet sure what kind of audio materials readers actually want. To investigate this question, Li (1995b) created materials that incorporated text and audio in four different formats. He used short, interesting stories² designed to promote the integration of reading, listening, and speaking skills. The first text, *Scientists Listen in on Whales (Whales)*, is a 200-word news article with point-and-click glossary help. Words likely to be difficult for ESL students are highlighted. When the student clicks one of these words, it is pronounced aloud (using prerecorded digitized speech). Definitions of the glossed words are also given at the end of the reading material.

A second story titled *Will the Leaning Tower Topple Over? (Tower)* discusses the Leaning Tower of Pisa. In this format, text is not automatically presented to the students at the beginning. Rather, they have the options of listening to the whole story without seeing the text or looking at the text, and can shift back and forth between these two modes.

A third story, *This Judge Really "Sentences" Criminals, (Criminals)* is designed to give students oral practice with smaller text units. Students can see the text and read it. Each sentence of the text is also linked to a prerecorded audio rendition that the student can request (by clicking) to hear at any time. Students can listen to the text sentence by sentence, read after the native speaker, and imitate the pronunciation and intonation.

The last text, *Everyday English*, is not a story but a collection of commonly used English expressions such as *Can you give me a ride?* A student can click an expression in order to listen to it again and again. This activity is designed for learners who want to learn to speak some limited English for a specific purpose.

The various formats also vary with respect to the amount of time the user has to wait while the audio material is downloaded, that is, copied to the user's machine so that it can start playing. The audio associated with the story *Tower*, the audio of the whole story, is longest and takes the longest (up to about 1 minute depending on the speed of a local network) to download. Other audios are for individual words or sentences, which imposes a wait of only a second or so. The wait for downloading is an issue for all multimedia

materials for the Web, particularly video and, to a lesser extent, still pictures.

Our intent was to see which formats our worldwide clientele of ESL students and instructors would find most acceptable. As a rough measure of acceptability, we kept track of the frequency with which each file was accessed (the Web server that we used can automatically record simple usage data in a usage log).

The frequency data indicate that, among the four formats, the first story *Whales*, with point-and-click pronouncing glossary, has been accessed most. This may be due in part to the fact that it occupies the first position in the menu and attracts more attention, but it may also be because it involves a shorter wait to hear the audio. We did not anticipate, however, that the third story *Criminals*, with the format of listening to the text sentence by sentence, would be the least accessed section, only about 30% as often as the average of the other three sections. Nor did we expect that, among all the individual sound files, the longest sound file—the whole audio for the second story *Tower*—would be accessed most, about six times more often than most other individual sound files. We thought that this sound file would be accessed infrequently because it takes so long to download. The popularity of *Tower* may indicate that ESL learners like the particular story content, or like to hear a whole story rather than listening to it sentence by sentence, or that they prefer one long wait to many short ones, or some combination of these factors. Generally, however, ESL Web learners seem to like the *Everyday English* best because the sound files in this section, which occupies the last position in the menu, have gotten much more use than the audio materials in other sections.

These statistics, of course, do not bear on the effectiveness of the different formats, only on their acceptability. They do, however, show that we cannot trust our intuition in these matters and so suggest the value of further experimental work.

Templates for Interactive Exercises

Besides the structuring of multimedia materials, attaining adequate interactivity is another problem for Web-based instruction. The greatest hurdle for HTML authors is without doubt the cumbersome process required to create interactive activities. Web forms do provide instructionally useful input formats such as scrolling and nonscrolling text areas, check-box buttons, radio buttons, and pop-up menus (see sample of Netscape Interactive Facilities at right). On the other hand, forms have serious drawbacks, a major one being that creating exercises generally

Sample Netscape Interactive Facilities

What would you say?

- ☒ a. So?
- ☐ b. You're in big trouble.
- ☐ c. Which one?
- ☐ d. You're setting yourself up to fail.

Radio Button

- ☐ Features
- ☐ Recommendations
- ☐ Price
- ☐ Article

Check-box Button

Select Your Location

Africa
Asia
Australasia
Europe
North America
South America

Select Your Location



Pop-up Menu



Scrolling Text