Chapter XIII

LEZI: A Video Based Tool for Distance Learning

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ABSTRACT

In this chapter we present LEZI, an experimental software tool oriented to the production of indexed videos enriched with hypertextual and multimedia elements for distance learning applications.

LEZI is based on the assumption that in particular types of educational hypermedia productions, the quality of educational content may easily compensate for a user interface limited to the essentials or a reduced set of multimedia features. Production of this kind of hypermedia application can be high quality, even with short production cycles at very low cost.

The purpose of the chapter is to show how a traditional lesson or a conference can be effectively transformed into a powerful multimedia product based on a very simple and regular structure.
INTRODUCTION

Modern hypermedia applications are complex to conceive, and expensive to produce in terms of content and design (Bochicchio, Paiano & Paolini, 1999a; Bochicchio & Paolini, 1998). Attempting to reduce costs or to shorten production time may easily result in poor-quality products (Garzotto, Mainetti & Paolini, 1995).

Nevertheless, we are convinced that in some specific niches, good-quality multimedia contents can be easily created and transformed into video-based e-learning applications — in a short time and at a low cost.

Good teachers obtain and hold the attention of their students by speaking, by using images and slides, by showing objects, by writing on the blackboard, by using gestures, and so on. Therefore, good teachers can easily create good-quality content that can be video-recorded and used to produce hypermedia applications and to publish their work on CD/DVD or on the Web.

However, it is well known that long video sequences (e.g., one hour or more) are not compelling and not interactive. Moreover, usual linear cursors and VTR-like controls, as shown in Figure 1, are ineffective for navigating video sequences longer than a few minutes.

The idea discussed in the rest of the chapter is that, just as a book needs a hierarchical index to allow the reader to find a specific topic without reading the whole text, a video lesson needs a hierarchical index to enable the students to find each topic they are interested in without looking at the whole video.

Various commercial tools suitable to help teachers create indexed videos are analyzed in the in this chapter before introducing LEZI, an experimental tool oriented to the production of hierarchical indexes for long video sequences enriched with hypertexts and other multimedia elements (referred to hereafter as hypervideos).

The structure of the chapter is as follows: in the Background section, we define the position of our work in relation to the literature and the existing products. Further sections deal with the requirements, the conceptual modeling and the main implementation issues of the proposed tool. A description of the main features of

Figure 1. A Typical Linear Cursor to Navigate Video Sequences
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