THE CBT CRAFTSMAN

Fontastique

Creativity in CBT extends from course content to how the letters look. There are endless variations to the fonts and faces you can present on the screen.

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One of the real pleasures of being an author is seeing your work in print, cleanly typeset and attractively laid out on the page. Even if people don't agree with what you say, at least you know that your work looks good and projects a professional image. Typesetting and layout are important aspects of the publication industry. Most authors do their own typing today—Jimmy Carter got national attention for writing his autobiography on a word processor—but virtually none would dream of doing their own typesetting and layout. The final page image is entrusted to designers with special training in print production.

Computer-based training authors, on the

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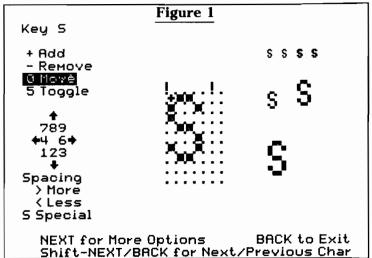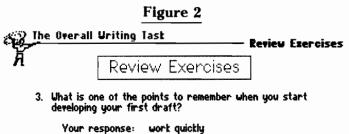
Figure 1

Figure 1 shows a screen from a character set editor in which attributes of the letter "S" can be changed by moving the cursor from one pixel to another.

Figure 2

Figure 2 shows three different fonts. In one, the words "Review Exercises" (upper right) have been thickened by character attribute editing.

other hand, seem to be expected to handle screen design and layout as well as subject matter organization, instructional design, and lesson programming. I have addressed this issue in general terms in a previous column ("Anybody Can't Do CBT," *Training News*, March, 1985), but I want to focus more closely on one major characteristic of screen design: font selection. One of the easiest ways to dress up your CBT materials is to make judicious use of character fonts rather than to use only the standard font(s) supplied by your system.

Let me first differentiate character *fonts* from character *attributes*. Character attributes embellish text without changing its basic appearance. Such attributes include character size, boldface, blinking (or flashing), reverse video, and underlining. Character fonts, on the other hand, change the basic text appearance. The "What's New" section of this issue of *Training News* shows four different fonts: Cheltenham Light for basic text, *Cheltenham Book Italic* for italicized text, **Cheltenham Bold** for headings, and **Triumvirate Bold Condensed** for the reader service card references at the end of each product description.

"Wait a minute," I hear you say, "I can't do that on my system." Not easily, perhaps, but it can be done on almost any system that allows you to overwrite the memory locations that store the dot patterns for individual characters. This capability is common on microcomputers, but can also be found on some mainframe terminals. The level of system knowledge needed to implement your own fonts may at first appear to be one of the points I discussed in my July column where CBT implementation can cross the line between lesson and systems programming. An increasing number of authoring systems, however, are now providing ingenious routines for achieving the same effect quite easily. I discuss two such systems in this article, but would appreciate hearing from readers about others.

Some years ago I had a conversation with Paul Tenczar, one of the major developers of the University of Illinois's

PLATO system and the originator of PLATO's *Tutor* language, about the unique and lasting contributions PLATO has made to CBT. Among the many software innovations that PLATO introduced, Paul felt that one of the most significant was its easy-to-use routine for implementing author-defined character sets (fonts). Paul has since gone on to develop *TenCORE*, a PLATO-like authoring system for the IBM PC. (*TenCORE* is a trademark of Computer Teaching Corporation, Urbana, Illinois.) *TenCORE* is a good example of a system that provides comprehensive font control in an easy-to-use manner.

TenCORE fonts are referred to as "character sets," and the authoring system provides a sophisticated character set editor for designing and modifying fonts. Figure 1 shows a screen from the character set editor that I used to redesign *TenCORE*'s standard "S." The editor allows you to move a cursor (shown by a "+" in the figure) from one pixel position to another inside the character "cell" defined by the dots in the middle of the screen. ("Pixel" is an acronym for "picture element," the smallest individually addressable entity on a computer screen.) When the cursor is in a position where you want to add a dot, you press the keypad "+" key. To remove a dot, you press the keypad "−" key. The dot pattern you are editing appears at the right of the screen with various attributes (different sizes and thicknesses) so you can see what the computer will look like when used in your course. Compare the "S" in the words "Spacing" and "Special" at the lower left of Figure 1. My character is four pixels wide, while *TenCORE*'s is five. In addition, the ends of my character curve, while *TenCORE*'s are straight.

Figure 2 shows a screen I designed using *TenCORE* fonts for a course on business writing that I developed for KJ Software, Inc., of Phoenix, Arizona. The question and response prompt on this screen are in my unembellished standard font. The two headers at the top of the screen are in the same font, but are displayed with the "thick" attribute which doubles the dot pattern in the horizontal direction, giving the text a bold-faced look. The words "Review Exercises" that appear in a box below the headers are written in a second, larger font that I use for major titles. The feedback below the student's response is written in a third, italicized font that I use for emphasizing text or attracting attention to text that is added to an existing screen. Note also the message in the bottom right-hand corner of the screen instructing the student to press the return key. The little IBM return symbol is simply another character that I designed with *TenCORE*'s character set editor.

The new *PC Pilot*, designed by George Gerhold and Larry Kheriaty of Western Washington University, is another good example of an authoring system that provides author-definable fonts. One of the nice features of *PC Pilot*'s approach is that it allows character dot patterns to be redefined within the mainstream of a lesson's program code rather than requiring the use of a separate character set editor. This helps speed the development process, but also limits flexibility. *PC Pilot* fonts are limited to standard 8 × 8 character cells, while *TenCORE* fonts allow character cells to be from 1 to 10 pixels wide and from 6 to 16 pixels high. *TenCORE* fonts also allow variable pitch (character width), where m's and w's are wider than i's and l's (see Figure 2). Variable pitch is used in virtually all printed materials these days and gives text a highly professional look.

Reverse video, color, and blinking text attributes often exhibit such powerful visual effects that they detract from the readability of the rest of the screen. Author-definable fonts, on the other hand, provide an excellent way to highlight and vary text in subtle ways, giving the materials a published, rather than a Madison Avenue, look. Author systems that provide these capabilities, along with a full-function authoring language, offer CBT developers an effective tool for developing materials with a professional look to complement their overall screen designs. □