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NOVELTIES

Devices to Take Textbooks Beyond Text

By ANNE EISENBERG
Published: December 5, 2009

NEWSPAPERS and novels are moving briskly from paper to pixels, but [textbooks](#) have yet to find the perfect electronic home. They are readable on laptops and smartphones, but the displays can be eye-taxing. Even dedicated e-readers with their crisp printlike displays can't handle textbook staples like color illustrations or the videos and Web-linked supplements publishers increasingly supply.

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enTourage Systems

The eDGe has an e-reader screen on the left and an LCD screen on the right for color displays.

Now there is a new approach that may adapt well to textbook pages: two-screen e-book readers with a traditional e-paper display on one screen and a liquid-crystal display on the other to render graphics like science animations in color.

The dual screens are linked by a central processor so that, for example, a link on the e-paper display can open on the color screen.

A two-screen device called the eDGe will be released by enTourage Systems in February for \$490, said Doug Atkinson, vice president of marketing and business development for the company, based in McLean, Va.

The dual screens of the eDGe open like a book with facing pages. The e-reader screen is 9.7 inches diagonally; the color touch screen on the liquid-crystal display is 10.1 inches. The two screens interact in many ways. For instance, if the textbook on the black-and-white e-reader displays an illustration from a file that is in color, "the machine can move the illustration over to the LCD and run it there in color," Mr. Atkinson said.

The e-reader screen is used with a stylus that can underline or highlight text, take notes in the margin, pull up a blank piece of e-paper for solving math problems, or touch a link for a video of a chemical interaction that is then displayed on the LCD screen.

The virtual keyboard is on the LCD side, as well as an audio recorder and a video camera. The device uses [Google's](#) Android operating system, so other applications like word processing can be added, Mr. Atkinson said.

The two screens swivel, so that the LCD screen can be tucked beneath the e-reader if space is tight. Then the device can be used as a note-taking tablet, or it can be flipped over to the other side for sending e-mail.

Sarah Rotman Epps, an analyst at [Forrester Research](#) in Cambridge, Mass., said that the enTourage device was part of the next generation of e-readers, which would be hybrids. "They won't just be a netbook or a tablet or an e-reader," Ms. Epps said, "but a combination that will bend the categories consumers expect from electronics."

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E-textbooks have special requirements that can be addressed by hybrids like the eDGe, she explained. "The devices have to render graphics faithfully, ideally with color," she said, "and students should have the ability to take extensive notes and share them," as well as have access to whatever interactive elements publishers provide.

Until such features come to market, Ms. Epps said, "electronic book readers are great for reading novels, but they aren't right for textbooks."

Allen Weiner, a research vice president with Gartner, said that many students would simply read e-textbooks on their laptops. But even so, dual-screen devices are likely to find a place in the market, he said, provided the models have fairly large screens for both displays. "The window you need for effective video interaction doesn't have to be giant," Mr. Weiner said, "but it needs to be a decent size" so that readers can click on a link and find out more. In addition, students can use the hybrids to take notes and underline text directly on the screen using the stylus, something they can't do on most laptops.

Two other new devices also use dual screens. [Barnes & Noble's](#) new Nook e-book reader (\$259) has a small LCD touch screen beneath the reading display to be used primarily for navigation. Another device not yet on the market, the Alex from Spring Design in Cupertino, Calif., has a 3.5-inch LCD for browsing the Internet and interacting with the e-reader content. Spring Design will announce pricing in January, said Eric Kmiec, the company's vice president for sales and marketing.

"You will probably soon see combined e-reading devices with LCDs that are slightly smaller than the enTourage, but larger than the Alex," Mr. Weiner predicted.

Electronic textbooks may one day offer a convenient way to study, said Ms. Epps, literally lightening a student's load. **That's already happened at Catholic University of America in Washington, where Robert A. Destro, a professor of law, and his students are testing a version of the eDGe. Professor Destro has 13 textbooks on his device.**

"It's wonderful not to have to lug those books around," he said.

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A version of this article appeared in print on December 6, 2009, on page BU4 of the New York edition.

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