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Opinion

In an age of e-readers, are students still open to books?

By Naomi Baron

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Photo: Lance Iversen, Staff / The Chronicle

Emily Li (front) and Michele Chan follow a demonstration on using iPads at San Francisco's Presidio Middle School. Yet screen-savvy young people still say they prefer to read print on paper. are among the select group of kids to receive I-pads for an Algebra class rather than the traditional textbook. It's a pilot program looking to expand digital textbooks. Friday, Sept. 10, 2010.

Blame the trend on [Arnold Schwarzenegger](#). Back in 2009, when California was facing a potential \$41 billion deficit, the governor had an idea: free digital textbooks. Hardbound was hidebound, and too rich for the state's budget. Five years — and zillions of Kindles and iPads — later, e-textbooks are permeating education. Sales and rentals have soared, yielding big savings

for students, parents and school districts. As the new academic year revs up and the book bills start rolling in, the electronic option looks appealing.

Besides cost, there's much talk about the convenience of e-books, along with benefits to the environment. And aren't young people already voting with their digital feet? Just look at how many hours they spend glued to their phones, tablets and laptops. Surely they love reading onscreen.

A different reality lies beneath the surface.

For several years I have been surveying university students about their reading practices and preferences. I've probed what platform — onscreen or hard copy — they favor for different kinds of reading. I've also inquired how often they annotate or reread, how much multitasking they do, on what kind of platform it's easier to concentrate, and how cost shapes their choices. What surprises me is how much these young people, who can't stop texting during class, understand about the mental benefits of print.

The students were far more likely to prefer reading in print over digital screens. They did more annotating and were more likely to reread when using print. They also reported better memory for what they read in hard copy.

A number of studies have compared how much students learn when reading digitally versus in print. Using simple comprehension tests (think of SAT reading passages), the majority of research has reported that medium doesn't matter. However, more subtle testing is revealing differences in the type and depth of learning. One such disparity is in the ability to articulate the principles behind the empirical information you encounter. Here, print wins.

We shouldn't be surprised. Young people are keenly aware of what happens so frequently when they set out to read digitally: 80 to 90 percent in my studies reported they are likely to be multitasking. Or taking just a quick look at Facebook. Or maybe watching YouTube while doing Spanish exercises. (Only 25 to 30 percent multitasked when reading print.) More than 90 percent said it was easier to concentrate when reading in hard copy. A number complained that digital screens gave them eyestrain, but the real culprit was the Internet. Any device inviting your mind elsewhere is bound to decrease mental focus.

Like students, schools need to be mindful not to compromise in-depth learning for the sake of trendiness or cost. Yes, saving money was high on the list of what those in my surveys liked about digital books. But what if the price were identical? A whopping 89 percent preferred hard copy.

Similarly, for all their worries about the environment, a number of participants acknowledged that their concerns were at odds with learning. One wrote, "Digital screens save paper, but it is hard to concentrate when reading on them." Another couldn't bring herself to print out digital materials "for the environmental considerations," but "highly highly" preferred hard copy.

On environmental issues, what counts as "friendly" is far from obvious. I heard complaints that printed materials kill trees. But seeing those trees, we tend to forget they are a renewable

resource. The nonrenewable resources we don't see are those rare minerals (mined in African conflict-filled areas, where profits often support warlords) that go into making digital devices. We also don't focus on the billions of watts of electricity consumed by digital data warehouses, the fans needed to cool servers and dangerous toxins released when recycling devices.

Granted, onscreen reading has educational virtues. E-texts are easily searchable and enable students to access external resources such as dictionaries and websites. Materials can be personalized to learning styles and abilities. Digital screens work well for short texts and when students are searching for information.

The Delphi Oracle counseled, "Nothing in excess." When choosing how to do the reading — from kindergarten through college — cost and convenience matter. But when it comes to education, let's not be penny-wise and pound-foolish.

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