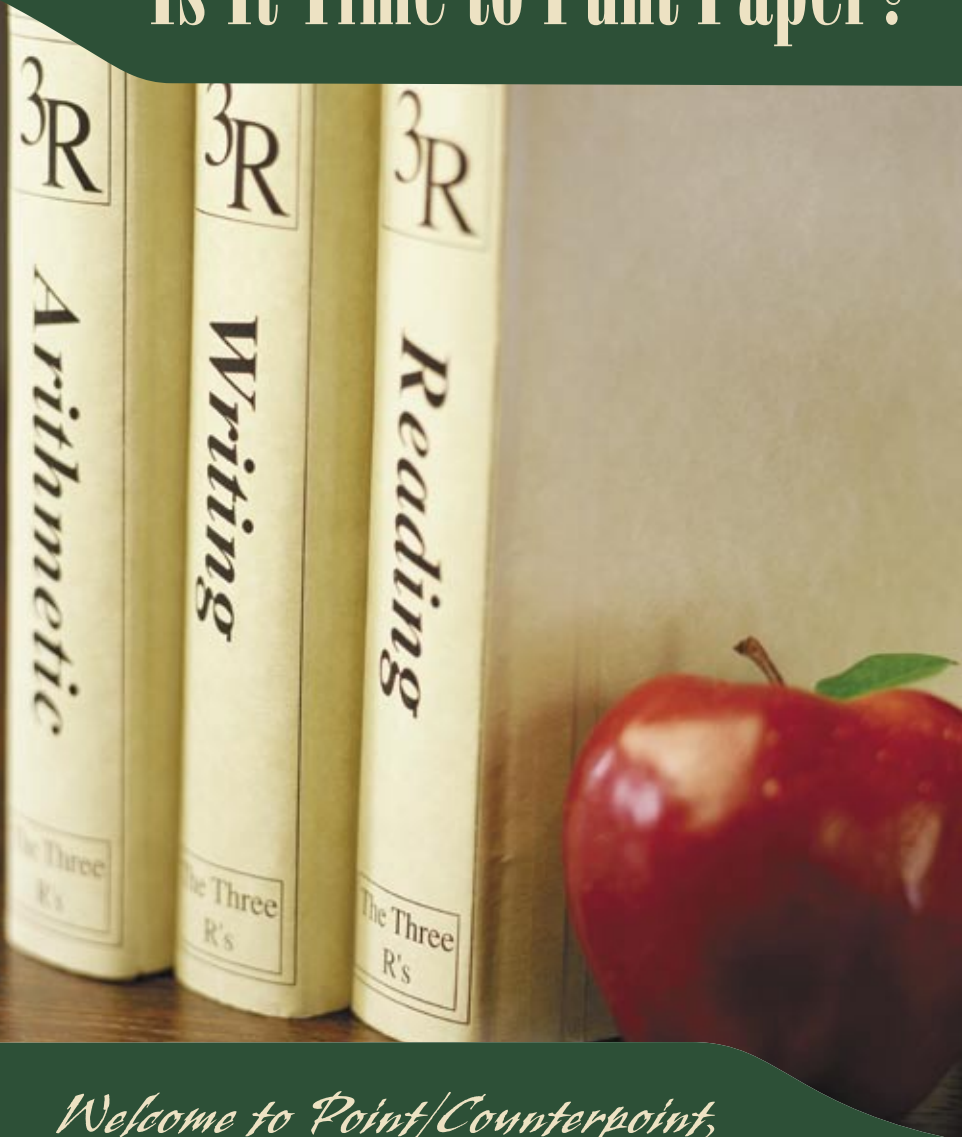


Is It Time to Punt Paper?



Welcome to Point/Counterpoint,

L&L's new department in which we put controversial questions before our readers. Point/Counterpoint kicks off with a question about textbooks: Should we replace bound paper textbooks with electronic media? Alice Owen, District Tech Director from Irving ISD in Texas, says yes. Renee Krupp, Director of Educational Technology for Charter Community School and Home Study Academy, El Dorado County (California) Office of Education, says no. Read on for their arguments.

Yes. Today's students are different. Unlike many of the teachers in our public school systems, our students have grown up with technology. Through e-mail and instant messaging, they use the computer to communicate more often than they use the telephone. They feel computers help them learn more and that technology makes school more interesting. Too often our schools are designed around what our teachers are comfortable with, rather than the learning styles of our students. Tech-



nology—specifically digital text—has the potential for transforming the way teachers teach and students learn.

No. We need to keep textbooks as a viable means to disseminate curricula and content standards. Many schools in the United States use state-adopted textbooks to deliver the prescribed curricula. In the majority of U.S. classrooms, especially from the fourth grade on, teachers rely heavily on the content within textbooks.

Teachers and schools are asked to accomplish much in the 180 days of school. Many teachers feel overwhelmed by the amount of content they are supposed to deliver and



teach, and the weight of national and state testing adds additional pressure. Few teachers have the time to create original lessons

Digital texts are not new. In 1991, a videodisc-based program called *Windows on Science* became the first state-adopted electronic textbook in the United States. It was an interactive, multimedia-based program that enhanced the classroom learning experience with video and audio. Unfortunately, technology changed rapidly and videodisc players went the way of 8-track tapes. We need to find ways to digitize our printed educational materials so they can be posted online, be accessible to students and parents, and not be dependent on specific hardware that may become obsolete in the future.

It has been said that information doubles at least every two years. How

can we expect all of this information to fit between the pages of a textbook? What really happens is that much of the content is left on the editing room floor. This editing waters down the information in textbooks and gives a great deal of power to publishers to decide what information is most important to teach our students. Why not let students explore multiple resources themselves? Electronic texts can be extended more easily than hardback books and could include search features, related Web links, audio and video clips, graphic animations, simulations and virtual reality experiences—something not possible with static printed materials.

Teachers tend to rely too heavily on the content in textbooks. When hardback textbooks are used, the most common teaching practice is to have students read each chapter (in

order) and regurgitate answers to the questions at the end of the chapter. Boring! Such an approach leaves little room for innovation, higher-order thinking, or truly informed debates on important issues if only one source is used. Digital materials, on the other hand, are by nature very flexible and can augment the classroom learning experience. Links and activities can be added to include current events, and key information can be updated easily. The Internet provides a wealth of online databases that contain valid and reliable resources. Imagine how teaching practices would change if teachers only used current multimedia-based materials with links to various resources, including primary source documents!

Now that many districts are providing wireless access to the Internet

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for each class every day. Hence, teachers turn to their textbooks. They are comfortable with this approach, and although textbooks and ways of using them need updating, we need to keep a reliable format in place as we transition to something new, something better. If we suddenly dropped textbooks, millions of teachers would require immediate retraining to learn how to teach without texts. Also, where would the content come from if it were not contained in the pages of a textbook? And who would develop it?

This is not to say that textbooks are perfect. Far from it: they are too heavy and too expensive, with a laborious development process. Influences far from the field of education

determine final content, and they frequently become outdated years before a new edition is released. However, it is the book feel and supplemental resources that we would miss if we totally got rid of them. On the horizon, however, is an innovation that can be used in conjunction with existing textbooks.

Smart paper technology uses the textbook as a remote control for connecting to and operating computers, CD and DVD players, the Internet, movies, simulations—in short, anything digital. This gives us the best of both worlds: tried-and-true textbooks and the ability to combine print with digital content. The books use touch user interfaces (TUIs) on each page to connect to digital content.

The new textbooks are on the horizon. They are printed, as we are accustomed to, yet also interactive, with the ability to provide timely, relevant digital content from myriad sources. These books will be able to call up, on demand, gigabytes of content, data, images, simulations, vocabulary, and online quizzes, with the possibility of sending reports back to the teacher or parent as to how well the student did as he or she completed the lesson.

We do need textbooks; but we also need change. We shouldn't be foolish and toss the years of accumulated knowledge and resources in the texts; on the other hand, we ignore at our peril the advancing march and relevancy of electronic media. A friend of

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and laptops for their students, online textbooks become a feasible choice. Students don't have to wait for the teacher to give them information. They can go online and find answers for themselves. This technology changes the locus of control in the classroom from teacher-centered to student-centered. Just think how learning would be different for students if they had to search several sources of information, compare and contrast the viewpoints given within the various sources, debate all sides of the issue, and come up with their own conclusions. Students would be able to see the meaning behind original works firsthand,

rather than trying to decipher the two sentences in a hardback textbook that tried to explain the work.

The possibilities are endless with digital resources, whereas hardback textbooks are static and unchangeable. Using online, interactive materials, students will be more engaged, which leads to improved learning. It also beats carrying around a 50-pound backpack!

Dr. Alice Owen is an experienced principal, staff development director, technology director, and statewide executive director of a computer education association. She has been involved in several ISTE committees. As executive director of technology in Irving ISD, she currently oversees a districtwide implementation of more than 8,000 laptops.

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mine, blues singer Gaye Adegbalola (1982 Teacher of the Year for Virginia), penned a telling song in which one refrain goes as follows:

Johnny can't read, but what
does Johnny have to know?
Look at the competition;
it's the Age of Video

We not only need to lead students to the knowledge encrypted within the letters and phonemes of textbooks, but also to acknowledge that much of their information comes from electronic sources. TUI books provide easy alternative displays of information that supplement the text by providing digital content on demand. The books can also assist with the teaching process. Another consideration is that teachers can create their own smart paper books to supplement any text.

It is critical that content be interactive and animated and include engaging simulations of real situations. This media can actively demonstrate to students what we have previously asked them to understand just by learning a new vocabulary (scientific terms) and then asking them to visualize what we are talking about (scientific concept).

Textbooks have much to offer, but they must embrace the Digital Age. Smart paper technology can help students see textbooks as the million-dollar resources they are! Before you throw all the books away, try a new textbook.

Renee Krupp is director of educational technology at the Charter Community School, El Dorado County Office of Education, Placerville, California. She has been an educator for 35 years and has earned numerous teaching credentials. Renee is passionate about education and technology and committed to making both work for all learners.