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Low-Tech Teaching with High-End Results

By Andrew Pudewa

If you attend a large education conference these days, a quick circuit around the exhibit hall makes one fact immediately evident: Everyone and everything is moving high-tech. Apple® likely sports the largest exhibit with a dozen or more booth spaces, while all the major textbook publishers are showcasing their interactive e-texts. Reading and literacy specialists are being pressured to use the newest tablet-based apps designed to teach reading to young children in the primary grades. Grammarly™ -style automated editing and writing assessment programs abound, while nary a word is breathed about writing on paper, let alone the state-standards' idea of cursive handwriting. From the looks of the vendor hall, technology can and certainly will quickly ensure fool-proof teaching of basic skills while guaranteeing that all children will easily learn everything needed to meet the new standards. The paperless classroom is our inevitable future.

The menu of conference presentations reinforces this. Roughly estimated, at least a third of the talks address some sort of technology in the classroom, with the rest evenly distributed between topics ranging from classroom management to fundraising to differentiated instruction. An interested teacher would be hard-pressed to find much in the way of methods or pedagogy for teaching basic skills. In fact, there is little at teacher conferences about the art of teaching.

But this is not new; technology has been the main topic of conversation in education for over a decade now, with ever-improving devices and a greater variety of software promising even better results. However, nowhere can we find any actual correlation between technology in the classroom and an increase in test scores. In fact, the reverse seems to be true, and it has been for well over a decade. In 2003, Todd Oppenheimer's exhaustive study *The Flickering Mind: Saving Education from the False Promise of Technology* cites numerous examples of an inverse relationship between technology in the classroom and basic reading, writing, and math skills. He found some of the highest levels of competency in schools with zero technology (Montessori and Waldorf), and the lowest levels of ability in technology magnet schools.

It seems that neither the schools nor the marketplace heeded that warning, and the push for more and better "edtechnology" thrust tablets into the hands of first graders in the Los Angeles Unified School District, even while study after study and expert after expert testified to the inefficacy of such expenditures. In fact, one recent report from Clemson

University confirms this, showing that improved Internet access has zero benefit to students' test scores[1] , and a Time.com article by Dr. Nicholas Kardaras (*Screens in Schools Are a Sixty Billion Dollar Hoax*)[2] lists dozens of studies showing negative correlations between increased technology use and student performance and well-being. Dr. Kardaras claims that the huge push for technology in schools is driven mainly by commercial interests, not by academic research or education professionals.

Of course, we at IEW® are often asked about the effect of technology on writing instruction, whether e-books will replace real books, and how our materials can be adapted for a high-tech classroom environment. While we appreciate and utilize a variety of apps and programs to improve our materials and our services, even offering webinars and online classes, we also realize the importance of children developing basic skills with pen and paper. There exists an abundance of peer-review journal published research which strongly supports the following claims:

1. Reading on paper rather than screens provides better comprehension for both young children and older students.[3]
2. Writing on paper versus typing stimulates the brain in different and beneficial ways.[4]
3. Students have better recall of content when taking notes on paper as opposed to typing.[5]
4. And there is even evidence that cursive writing offers significant neurological benefits over printing on paper.[6]

Therefore, we coach teachers to use a low-tech approach to teaching writing in the classroom, especially in the primary, elementary, and middle grades. Not only does the research indicate that it's good for the students' brains, we believe it promotes better thinking as well. Consider, for example, some of the great writers who pre-existed (or refused to use) modern technology. C.S. Lewis hand wrote every one of his books on paper—with a fountain pen! Take any of the nineteenth-century greats: Dickens, Twain, Bronte, Melville, and others. All wrote on paper.

There's a carefulness that pen on paper engenders—a mental rehearsing of the phrase, the rhythm of the sentence, and the sounds of the words—much more demanding than the easy and quick spewing of words onto a computer screen, which is likely to require heavy editing in order to even approach artistry. Perhaps a valid analogy would be to compare a handmade knife, beautiful as well as functional, forged and crafted for days by a master and lasting a lifetime, with the assembly-line produced, nearly disposable utensils common in our modern box stores and supermarkets.

I once heard someone relate a quote (which I have not yet been able to substantiate) that went something like this: "Hemingway wrote better than Grisham for lack of a computer; Twain wrote better than Hemingway for lack of a typewriter; Homer wrote better than Twain for lack of paper." Although I'm not sure I entirely agree with this anonymous quote, it is an interesting angle on the effects of technology on thought. In Plato's dialogue *Phaedrus*, Socrates relates the mythological story of the Egyptian god Thoth

who offered mankind the gift of writing, and Thamus, the king of all Egypt, observed that while this gift may be a blessing to help us remember, it also weakens the basic human faculty of memory, thereby creating "the appearance but not the reality of wisdom." So while we today are most grateful for the gift of writing and the progress of civilization (Recently I'm thankful for modern dentistry!), we also must realize that technology inevitably atrophies the skill it replaces, and there is always a price to pay.

In our classrooms today, the price of throwing out paper and pen may be too high, and the consequences of that decision might go unnoticed until it is too late to rescue the students who suffered it. A whole generation of children never learned a phonics-based foundation for reading and writing, and as adults they discovered—and admitted—that they had been cheated, handicapped for life. Writing is a distinctly human skill, and like speaking, it reflects thinking. If we utilize technology to make the process too effortless, we may lose not only the discipline and the basic ability to put words on paper, but the quality of thinking that writing well requires.

Do a Google search of "How to Write an Essay," and the first hundred or so hits that come up are websites not teaching you how to write an essay, but attempting to sell you pre-written papers or their services in writing for you a "guaranteed plagiarism-free paper" for ten to thirty dollars a page. Today, many college students who get caught submitting a stock or ghostwritten paper don't believe that they have done anything wrong; they are just "using" technology, and that's what millennials do. Little actual thinking required.

So we at IEW, who still value the tried and true processes of writing and thinking, of physically putting words on paper with pen, and of wrestling with ideas and the best way to express them, will continue to do what we do to support those of you who also see through the chimera of technology, tending to the development of the minds and souls of your students. And when the false promise of computers in the classroom is exposed as the hollow substitute for real learning that it is, you—and we—will find ourselves, our schools, and our students the most well-prepared for leading their generation with excellent speaking, writing, and thinking skills.

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1 Hazlett, Thomas W. and Schwall, Benjamin and Wallsten, Scott, "The Educational Impact of Broadband Subsidies for Schools Under E-Rate" (May 17, 2016). Available at SSRN: http://ssrn.com/abstract=2796048 2 http://time.com/4474496/screens-schools-hoax/ 3 Schugar, H.R., Smith, C.A. and J.T. Schugar, West Chester Univ. of Pennsylvania, "Teaching with Interactive Picture E-Books in Grades K–6," The Reading Teacher, Vol. 66, Issue 8, May 2013. Also: Anne Mangen, et al., "Reading linear texts on paper versus computer screen: Effects on reading comprehension," International Journal of Education Research #58, 2013 4 Anne Mangen and Jean-Luc Velay (2010), "Digitizing Literacy: Reflections on the Haptics of Writing," Advances in Haptics, Mehrdad Hosseini Zadeh (Ed.), InTech, DOI: 10.5772/8710. Available at http://www.intechopen.com/books/advances-in-haptics/digitizing-literacy-reflections-on-the-haptics-of-writing 5 Pam Mueller (Princeton), Daniel Oppenheimer (UCLA), "The Pen Is Mightier Than the Keyboard: Advantages of Longhand Over Laptop Note Taking," Psychological Science, June 2014 6 Anne Mangen and Jean-Luc Velay, "Digitizing Literacy: Reflections on the Haptics of Writing," Advances in Haptics, Ch. 20

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