

Before Bringing in New Tools, You Must First Bring in New Thinking

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Developments—laptops, iPads and others—are finally beginning to enter our classrooms in large numbers. This is long overdue. Our “digital native” students require these tools to prepare for their future lives in the digital age.

Yet the things that caused me, 10 years ago, to call our students digital natives—their comfort, for example, with digital devices and their assumption of always-available digital connectivity—will not automatically, by themselves, make them “educated.” Education is a process of gradually learning how the world works, and of understanding how one can play a useful part in that world. It is typically a long process, involving considerable mental effort.

Because today the technological context we live in is evolving so quickly and dramatically, the ways in which young people become educated are rapidly changing—and educators are scrambling to adapt. Unfortunately, in their rush to catch up and introduce new, digital tools, educators too often just add technology to classrooms, without changing the education itself to fit the future.

To create effective 21st century learning, it is not just our tools that need to change—it is our thinking. We need to integrate technology in a manner that not only allows students to do “old” things (such as writing or research) in new ways but, far more importantly, also enables our students to do *new* things, in *new* ways, and get a different, and better, education because of the technology.

We are making this up as we go along because we have to; there are no right answers, and evolving technology capabilities make it a moving target. Examples do exist of excellent integration of devices into instruction and learning by individual teachers and schools. But detailed, practical topic-by-topic solutions, such as “how to use personal devices to enhance a fifth-grade lesson on the Constitution,” must be figured out as each teacher plans. Unless a teacher is extremely experienced with integrating technology devices (and how many are?), it is highly likely that many potential activities that are appropriate, but not known, will be left out.

The pressure to use the devices, once schools have invested in them, is extremely high. So lacking a large pool of innovative ideas to draw from, teachers, in order to generate “usage, often have students do only trivial activities such as entering text, getting homework assignments or visiting websites, rather than employ the full power of these

powerful, connected computers. Students see such uninteresting and unchallenging uses of technology as an invitation to go onto Facebook.

Is there an alternative? Yes, and, amazingly, it is free. The alternative is *thinking before buying*—using teachers' and students' collective imagination to find innovative solutions.

No matter what the political pressures, before purchasing *any* educational devices (even if they are paid for by philanthropy) administrators should get all teachers and students to take a crucial, and generally missed, first step. I call it “imag-u-cation.”

Imag-u-cation means systematically, every day, in every classroom, *for at least a year*, taking the last five or ten minutes of the class to discuss the following question:

“If in today’s class we’d all had personal technology devices, what could we have done differently to get a better understanding of the material we are learning?”

Answers might include:

- “We could have set up a chat with a genomics scientist” (for biology)
- “We could have taken our own poll and analyzed it statistically” (for math)
- “We could have searched for great images to accompany the poem we read, and created a multimedia experience” (for English)
- “We could have gone on to the 9-11 database and added our own stories” (for social studies)
- “We could have each connected with an ePal in a country that speaks Spanish, and asked them how they would write a thank-you letter.” (for foreign languages)

Now imagine these thoughts expanded and amplified by the ideas of every teacher and student in the country (or the world). It turns out that thinking about, and imagining what devices can do for learning is in most cases far more mind-expanding—and educational— than actually using them.

Of course, it is important that the good ideas be recorded and shared. This is best done via 30- to 60-second videos that are recorded and posted on the spot (perhaps on a YouTube channel for every grade and topic), and tagged appropriately for searching. Doing this would quickly create huge repositories of innovative solutions. A teacher could type in “third grade, multiplication of 3-digit numbers,” for example, and get dozens of ideas, which, at 30 seconds each, would take little time to go through. A year or two of imag-u-cation would produce far more innovation (and, eventually, learning) than having devices ever would.

During the imag-u-cation period, both teachers *and* students would have extended their thinking about how to learn and reflected on great and appropriate technology uses. Equipment itself, with all its inevitable breakdowns, issues, and logistical problems, would not have gotten in the way or slowed things down, and all the ideas would have been made available to everyone.

Typically today, this type of imagining is done—if at all—*after* the equipment is purchased. The result is that while it is being done (as it must be), the devices grow old. New generations of tech products typically emerge every six months, with new features useful for education. So by the time teachers will have figured out the best ways to use the iPad 3, Apple will probably be selling the iPad 6. Few students want to work on an “old” device—outdated technology in schools is a frequently heard complaint.

Yes, there may be advantages in administrators—or political leaders—being able to say “look—all our kids have devices.” But educationally, it is far better to say “All our teachers and students are thinking hard, *before* we buy any technology, about how to use today’s devices (and just as important, tomorrow’s) to change our education for the better.”

In a fast-moving field like technology, there are no “best” practices to follow—only “good” practices that change frequently. The important thing is to always be inventing *better* practices. And this takes thinking, which, ironically, is best done, initially, without the devices actually in our hands. Hands-on use of technology is the *easiest* thing for students to learn on their own, and it is not what truly helps their education—what does that is reflecting, carefully, with their teachers, about what technology means for their learning.

So I recommend all schools spend a year (or two) “imagining” before going out and purchasing new devices. No one will be hurt by this; almost everyone will be helped.

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