The Dramatic Changes Technology Won't Bring

By Larry Cuban

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"There won't be schools in the future. I think the computer will blow up the school. That is, the school defined as something where there are classes, teachers running exams, people structured in groups by age, following a curriculum—all of that.... But this will happen only in communities of children who have access to computers on a sufficient scale."

That's Seymour Papert, cognitive scientist and designer of Logo, writing in 1984 about dramatic changes in schooling with the advent of the desktop computer. Nearly 30 years later, the U.S. Secretary of Education, Arne Duncan, spoke at the Association of American Publishers Annual Meeting in 2010 on the national plan for technology.

"We have the opportunity to completely reform our nation's schools. We're not talking about tinkering around the edges here. We're talking about a fundamental rethinking of how our schools function and placing a focus on teaching and learning like never before."

Claims about the power of new electronic devices to "revolutionize" schooling are a dime a dozen. Yet, if they are nearly worthless, why have smart people said them over and over again?

The answer is deeply embedded in American culture: a love affair with technology as the elixir of everlasting improvement in all things personal and institutional. In the past quarter-century, miraculous changes have occurred in communication, information accessibility, business and commercial activities, combat operations, medical diagnosis and treatment, and so many other activities. What about schools?

Schools have changed. There are far more electronic devices in schools than when Seymour Papert wrote in 1984. Students use cell phones, personal computers, and tablets at home and in school. Ditto for teachers. Classrooms have interactive whiteboards. So why is Arne Duncan calling for a "fundamental rethinking of how our schools function?"

The reason is that while there are new technologies in classrooms, how teachers teach and students learn have remained remarkably stable over the decades. Schools have not yet blown up.
Technology advocates like the U.S. Secretary of Education want teachers to integrate these powerful devices into their daily lessons and have their students learn more, faster, and better; they want schools to customize learning through online instruction to such a degree that students could learn at home, in the neighborhood, and, if necessary, in a classroom. They do not want more stability; they want dramatic change.

High-tech champions see that educators and entrepreneurs have integrated the use of technology in three ways. One has disappointed these champions; the other two promise a shining future.

The first way is in the classroom. Most teachers with abundant access to electronic devices have integrated desktops, laptops, interactive whiteboards, and clickers into their lessons. Students search the Internet, research projects, present PowerPoint slides, use whiteboards, and on and on. But these forms of technology integration frustrate high-tech advocates.

Teachers have incorporated powerful devices to do what they usually do in lessons: give homework and short lectures, guide whole class discussions, assign seatwork, and, of course, use textbooks, and test students. Not too much different from what parents and grandparents experienced in their schools. While such adoption of the new to sustain the old occurs in other occupations, high-tech enthusiasts deplore such limited use of powerful teaching and learning devices.

The second way of integrating technology is in the school. Combining online instruction for individual students tailored to their academic needs and interests with regular classroom instruction have emerged in the past few years as "blended learning." The "School of One" in New York City, Carpe Diem in Tucson, Arizona, and Rocketship charters in San Jose, California, are exemplars of this form of technology integration. High-tech advocates who see the customization of lessons in "learning labs" for up to half of the school day as a possible future for all schools have praised such "blended" schools.

The third way is for non-profit and for-profit K-12 cyber schools such as Agora in Pennsylvania and Florida Virtual School to offer students online instruction—a complete curriculum at home or elsewhere without ever entering school buildings.

Here, then, are three ways of integrating technology in classrooms, schools, and cyberspace. Most high-tech promoters praise "blended" schools; a few believe in a future where online learning ends schooling as we know it. Both loathe teachers' unimaginative uses of powerful devices to maintain existing classroom lessons.

What technology enthusiasts, however, too often forget, neglect, stumble over—pick a verb—are the multiple purposes of tax-supported schools in a democracy. They and many others futurists err—my choice of the verb—in equating access to information with becoming
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