

Are schools better than they were 20 years ago?

Has the introduction and proliferation of educational technology improved teaching and learning?

Yes

Innovative technologies have changed the nature of teaching and learning, making it literally a click away. In the 1980s, teaching and learning were limited in contextual and situational representations of knowledge. Today, students access unlimited information in multiple formats and modalities from their homes and classrooms in real time anywhere in the world. Such access through technology has enabled *every* student to experience the world and learning in a deeper more critical way. Twenty years ago, students in the heartland of America could not have had the same degree or quality of communication with



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students in other communities in a split second. Students communicate with students, teachers, and experts from around the world, learning and constructing their knowledge from a different perspective and through the lens of a different culture—listening to the voices of others.

No

The purpose of school is to educate, or in my opinion, “to produce critical thinkers.” And the purpose of technology is to increase efficiency. Regardless of our advancing technology, education has not improved in the last 20 years. That’s not to say we don’t have the desire or capability of improving our schools, we simply don’t have the mindset. Technology will never be a panacea for change, merely the conduit that assists change. In the last 20 years, our thinking has not changed enough to improve the quality of schools we have created for our children.

If anything, technology has improved the efficiency of some tasks, but has ultimately created more tasks. It can be likened to the Hydra fought by Hercules; once he cut off one head, two more grew in its place. Hercules created more work for himself.



Marc Simmons

Einstein asserted that “problems cannot be solved by thinking the same way we thought when we created them.” Hercules had to think

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Before the Internet, blogging, and podcasting, students' learning experiences and knowledge were constructed primarily through teachers' instruction and print materials—in a way, the electronic modality has eliminated the censorship inherent in that medium. Even language has been eliminated as a barrier to communication because of technology, bringing people from around the world together and creating opportunity for humankind to understand itself in a global context. The plight of different peoples in the world who suffer from poverty, starvation, disease, and major catastrophic events becomes available instantly, enabling faster responses by those who can make a difference. Never in the history of education have *all* students had the opportunity to

learn and to understand what they are learning in such contextually and situationally rich environments.

Teaching and learning have removed the shackles of the discriminatory one-size-fits-all modality of print. Technology has enabled the universal design of instruction and assessment of student learning through the electronic modality of the 21st century.

Twenty years ago, gifted students and students with disabilities, both at the extreme ends of the spectrum of learners, had to leave age appropriate social groups to have their needs met in separate, segregated settings within the school building where they received their special and gifted instruction. Perhaps at that time it was appropriate because teachers could not be all things to *all* students

in the same education classrooms using the limited capabilities of the print modality.

Technology enables highly effective and efficacious teachers to teach the full spectrum of students in every town in America. Teachers who understand what it means to teach *every* student know that they cannot effectively implement the full intent of the legislative mandates under NCLB or the IDEA using the print modality of teaching and learning. Belief that *every* student can learn and should learn must be at the heart of teaching if all students are going to experience success through the effective integration of technology.

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differently about defeating the Hydra, just as we must think differently about solving the problems we create with our outdated thinking. The problems that face our schools have been around for decades, and technology has done little to solve them. That is because it isn't technology's responsibility to solve our problems; rather, it is *our* responsibility to use technology *responsibly* to solve them.

And herein lies the rub: Our current state of education has little to do with anyone's proficiency with technology, but rather policy makers' and practitioners' reluctance to change. Although technology has revolutionized our society, our educational practices have changed little. We have merely placed rubber tires on the educational oxcart.

The carpenter does not ask himself how he can get more use out of his hammer, but rather which tools will help him accomplish the task at hand. Likewise, our students must be sifters, innovators, problem solvers and critical thinkers—experts in cognitive tools. Yet how many of these opportunities find their way into our students' lessons? To do so, educators must be originators of innovative and challenging curriculum or, in the words of Seymour Papert, “create environments of invention.” Unless educators are lifelong learners accepting of change, how can we expect them to create environments of invention for our students?

Until our creativity and pedagogy change to reflect the needs of an ever-changing society, no amount

of technology will save our schools. Shifts in our use of technology must shift with our understanding of effective pedagogy. We cannot afford to put rubber tires on the oxcart; rather, we must upgrade the cart into a tool relevant for today's society. Our students mustn't learn *yesterday's* skills but *tomorrow's*; else an ever-growing rift will remain between the kinds of students our schools produce and the kinds of citizens our society needs.

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