

A Celebration Of Uncertainty: The Future of Technological Education

By Joshua Halberstam

It is because modern education is so seldom inspired by a great hope that it so seldom achieves great results. The wish to preserve the past rather than the hope of creating the future dominates the minds of those who control the teaching of the young.

Bertrand Russell

Confusion unnerves us. It gives us *agita*. We are so desperate for *terra firma* that we prefer any answer to none at all. Too often, the result is massive waste and, sometimes, utter tragedy.

So commonplace is the lament about the current lack of direction in education that calling it a cliché is itself a cliché. Thank goodness. Because if, in this rapidly changing landscape, we assume we know which way to go, we're likely to march into educational junkyards and pedagogical dead ends. Before we proceed too far just anywhere and expend billions of dollars along with vast intellectual and political capital to get us there, we ought to take a deep breath and consider just how lost we really are. We have some hard choices before us.

Education is in transition and technology is the engine of that transformation. The typical, reflexive response to this sweeping assertion is emphatic annoyance. The exasperation erupts from two opposing flanks. One is the anti-technology camp that views techno-promoters as hype-ridden, bloated engineer types who believe way too much in their own cyber-press accolades. According to these critics, technology is no more than a wonderful tool, and in some instances not so wonderful at that. No "revolution in education" awaits us, they insist, no more than transpired with the introduction of television and AV equipment a generation ago. The same basic goals and methods of education endure. On the other side of the anti-technology pincer movement are those who see technologists as capable of doing what they say they can do and find this proposition utterly frightening. These virtual creators, we are warned, are demigods inventing new worlds in their own image: worlds that are affect-less, disembodied, and humanely disengaged. As a result, the essential educational intimacies of exchanges between teachers and students are in dire jeopardy. In one view, therefore, the clarions of educational technology are bluster and noise,

while, in the other view, they are the dangerous rumblings of emerging educational disasters.

One essential caveat must attend any speculation about the future of educational technology: in the broader chronological scheme, we've only been at this business for twenty minutes. From the vantage of these earliest embryonic stages, either of these criticisms may turn out to be right. Alternatively, however, both may turn out to be wrong, as I think will be the case. If we act intelligently, technology can indeed transform education for the much better and we are already beginning to see how this might occur.

Educational technology explodes traditional, tired categories. The structures of our educational institutions and the formal arrangements within them are largely the result of earlier geographic and temporal necessities. But in a world of ubiquitous information, where individuals can learn anywhere and at any time, the arbitrary ways that we partition our educational time and space will be increasingly nugatory. We no longer should or will arrange young people by their calendar year (as adults, do we only hang out with people our exact age?), for online, students will learn at their own levels irrespective of age. Why should all classes be forty minutes? Now, students will allocate their time as needed for each subject. Divisions among middle school, high school, college, and indeed lifelong learning and training will blur. Learning can take place anywhere and also can come from anywhere--local and global have no specificity in cyberspace--with all this implies for the contour of educational content. For example, we already have programs in global studies such that high school students in Missouri can have real-time conversations with students in Bombay. As important, the category of teacher will widen to include anyone in the culture who imparts appropriate information; students can access the knowledge of experts anywhere. But new technologies will alter the role of the teacher from transmitter of a culture's truths to a facilitator who helps students learn on their own (the "guide on the side" in the field's parlance).

Advocates herald educational technology as the best opportunity for wide-scale student-centered, inquiry based learning. But this broader constructivist agenda - the motto that champions learning *how* over learning *that*, learning by doing -- also leans on categorical distinctions that are increasingly fluid. For notice: I ask an eleven-year-old if she's memorized the state capitals. She asks me in response why in the world she'd bother inasmuch as she could so easily download that information to her palm pilot. And if she's forgotten where to get this information, she can always turn to Yahoo or some other search engine for help, and if still stuck, there are always several meta-search engines that will lead her to her destination. Knowing that begins to look more and more like knowing how to retrieve information.

Ah, but is that education? Although educational technology is a young field, it already has its own inventory of truisms. One such observation distinguishes

among data, information and wisdom. Yes, caution the pedagogical overseers, we have all these new ways of getting data and information, but this does not education make. True education entails the transmission of wisdom. But this complaint is too vague and too easy to be of much help. It's worth noting that many who are most vociferous in voicing this objection are also those who insist that our children lack in the "basics" of proper spelling, calculations, historical dates – hardcore facts. In fact, we need to consider whether mass public education ever successfully imparted such "deeper understanding." And just whose wisdom are we supposed to promote? If technology is not the solution to this particular, well-rehearsed challenge, it's not the problem either.

A comprehensive catalogue of changes that educational technology promises would also include the following: the melding of the public and private sectors – technology companies and their content share roles as central educational resources with schools; the increasingly tenuous nature of knowledge as intellectual property; the necessary reinvention of former repositories of culture such as museums and libraries. This list would also include the impact of technology on metaphysics, for example, how the centrality of the body in establishing identity will be replaced in cyberspace by identity as defined by one's thoughts and interests. But technology's most immediate educational disruption is that it forces us to reconsider the very aim of education.

Why educate our children? The question might be straightforward, but the broad spectrum of answers that have been proffered over the ages reflects just how complicated this question really is. From Plato and the *Republic* on down (and before as well), one theory viewed the purpose of education as the training of rulers. (Even a contemporary figure like John Dewey posits education as critical to a flourishing democracy since the people will be rulers, albeit of themselves.) Religious educators, for their part, saw the chief goal of education to be the establishment of proper religious sensibilities in their charges. Much educational effort was also undertaken with the aim of training students for future work. The tie between education and employability is heard often these days when governments worry about the "competitiveness" of their future workforce. Other theories of education concentrate on the importance of transmitting cultural values and accomplishments as a fundamental obligation to one's civilization. And still others argue that the true point of education is individual -- to enrich the lives of its beneficiary. Learning how to appreciate a Beethoven Sonata, to view a Rodin, to undertake a proof in geometry, and to understand the causes of the French Revolution -- all improve the quality of one's life.

And here is where technology plays a crucial role. Without doubt, the medium is somewhat the message in this case: *how* we learn certainly contributes to *what* is learned. But only somewhat – in fact, technology is neutral with regard to the broader educational aims. It does, however, provide a powerful utility for most pedagogical programs. As never before, it can individualize learning and target the single learner. At the same time, it can bring hitherto unavailable global

perspectives. It can offer lifelong, just-in-time training in skills needed in the marketplace and train managers and rules with new precision. In short, it can be an effective tool for a plurality of educational aims.

But we must decide what those aims are. In choosing the kind of life we wish to live and the kind of society in which we hope to live this life, we *ipso facto* align ourselves to an educational goal for our children. Advanced technologies provide a dazzling vehicle to get us where we want to go, but it can't tell us where that is. Educational technology also makes it increasingly viable to pursue a variety of answers – a development that enlightened societies ought to applaud. But more choices also entail more confusion. Acknowledging this uncertainty is the first step on this crucial educational journey.