Point/Counterpoint:
Leading, Embracing, or Following Technology

Mónica Byrne-Jiménez
Hofstra University

This Point/Counterpoint reminds me of watching "The Twilight Zone" as a child: "Do not attempt to adjust the horizontal. Do no attempt to adjust the vertical." The television, aka the technology, was beyond our control. We, as a field, have entered—unbeknownst to some of us—a twilight zone that, not unlike the television show, will challenge, unnerve, intrigue, and inspire.

Let me introduce you to the *QR code.* The QR code allows the reader to interact with the text in immediate ways: some hypertext here, an interactive map or graph there, an embedded video, opportunities to comment at the end. These are all elements of technology that we expect when reading an article online and all impossible to do in print media. So for this special issue on technology we decided to create a QR code and encourage readers to go to the UCEA website for these essays in their entirety and for an opportunity to interact with the issues raised.

To some, the meaning of the figure to the left is obvious, and chances are you may have already used your handheld device to scan it and are even reading this on the UCEA website already. To others, the figure is interesting, but in and of itself, meaningless (and some may be asking yourselves as I did, *I can use my phone to scan things?*). And therein lies one of the challenges in bridging the gap among those who lead, embrace, or follow technology, between those who see technology as a trend and those who see it as a way of life, between those who are suspicious of technology's insidious nature and those who have complete confidence in its transformative potential. But many of us do not fall into either of these "poles." Many of us, in fact, lie somewhere in between, and that position is movable depending on the context, our questions, and our foci.

And while we explore the implications of technology on our practice, the implications for schools and student learning is often an afterthought. Dr. Militello, Associate Professor in Leadership, Policy and Adult and Higher Education at North Carolina State University, emphasizes how technology can be meaningfully integrated in schools as an instructional and transformative tool. By identifying institutional, organizational, and individual challenges, we can begin to see the role of leaders in preparing schools for technology integration. Dr. Becker, Assistant Professor in Educational Leadership at Virginia Commonwealth University, offers a critique of the field and its monopoly on knowledge and information creation. His focus on issues of access, technology as an equalizer, and our roles/responsibilities as new "public" intellectuals deepens the discussion of our practice even further.

As Drs. Militello and Becker and I worked on this Point/Counterpoint, there was disagreement on how to "move" readers to the web. Do we simply include the QR code, no explanation, and let readers figure it out? Do we abandon the attempt completely and rely solely on the print media? Do we start to create a roughly hewn bridge between the two? We opted for the latter. Our hope is that you will be curious enough to seek help in downloading the appropriate "app" necessary to scan the QR code and meet us in the twilight zone.

Learning to Play a Player Piano

Matthew Militello
North Carolina State University

Technology in schools today is ubiquitous. Educational technology makes bold claims of efficiency and the ability to provide instantaneous, useful information about teaching and interactive, simulated learning experiences. Technology is also viewed as a liberating force by virtue of access (to both hardware and virtual worlds) and the appreciation of multiple learning dimensions. In short, technology has been seen as the tonic to what ails society in general and schools in particular. Technology zeitgeists like Thomas Friedman (2007) have made a compelling, if not alarming, economic case for more technological innovations in schools. More recently, my colleague and friend Scott McLeod (2011, in this issue) stated that we need educators "who are brave enough to create the new paradigm instead of simply tweaking the status quo." I agree. However, if technology is not only to be a disruptive force in schools, but also to have a transformational impact on teaching and learning, we must look beyond the tools of technology and pay specific attention to its purveyors.

For decades, new technological innovations have promised to revolutionize society and schools. The radio (1920s-1940s), TV (1950s-1980s), computers (1990s-2010s), and now virtual environments and interactive, instantaneous communication tools have all traveled a cycle of high expectations and low results in schools. For example, educational radio promised to "upgrade" teaching skills by having a "tremendous influence and have adjusted the curriculum, teaching processes, and even administrative practices to take full advantage of this powerful learning aid" (Levenson, 1945, p. v). The story of how technology, such as the radio, infiltrated the classroom but not the practices of teachers' teaching and students' learning is common. The chronic hype *for* educational technologies has outpaced the use *of* educational technologies (see Cuban, 2001). Why does this cycle continue? Why do technologies come in ceremoniously but leave in its wake dust-covered ghosts of technology past?

A Detroit school principal in the 1930s provided a rationale for the failure of educational radio to make a mark on teaching and learning: "Degree and rapidity of the development [of the radio] was determined largely by the interested and carefully controlled activities of teachers themselves" (Thomas, 1932, p. 980). This principal's reasoning served as a prognostication of how future educational reforms, with or without technology, were not able to penetrate the practices of teacher pedagogy, student learning, or principal leadership. Failure has not been a result of technical issues. Reform after reform has met psychological, organizational, and institutional issues, and reforms have lost. Rob Kling (1996) summarized these powerful dimensions with an effective analogy: "We do not simply replace horses and mules with cars and trucks. We have configured an elaborate system of motorized transport, including new roads, traffic regulations, gas stations, repair shops, insurance and so on" (p. 44).

There certainly continue to be issues of access—implementation of innovations have notoriously been a story of "haves" and "have nots" (currently access to Internet connectivity in schools and at home is an issue of educational equity). Beyond access there is another issue that is often conspicuously overlooked: the skill (capacity) and will (motivation) of the end-users. This is also known as the readiness of individuals to effectively use technologies and the capacity of the technology itself to make a meaningful contribution to both teaching and learning in schools.

In Kurt Vonnegut's (1952) first novel, *Player Piano*, he wrote, "Without regard for the changes in human life patterns that may result, new machines, new forms of organization, new ways of increasing efficiency, are constantly being introduced. To do this without regard for the effects on life patterns is lawlessness" (p. 52). School educators today must be savvy producers, consumers, and mentors of the complex and expensive world of educational technologies. I argue that the integration of technology is a problem of *people*ware, not hardware or software.

The lesson here is that meaningful and effective change needs extensive, supported, and sustainable strategies for the institution, organization, and individual that correspond with a disruptive force such as educational technological innovations. The multitude of factors or deficits that inhibit such change has been reported ad nauseam. Here I offer three grand challenges to create conditions for technology integration in schools. Taken together these grand challenges may prove useful in the meaningful, effective, and sustained integration of technology in schools.

Grand Challenge No. 1: Technological Grammar

Institutionally we need to allow technology to change what schools currently look like. Traditionally, reform efforts have been thwarted by the public's perception of what schools look like—mostly from their own experience. This has led to isomorphism where innovations transition back to the established grammar of schooling (see DiMaggio & Powell, 1991; Tyack & Cuban, 1995). While there have been recent strides to innovate our schools (e.g., Department of Education Investing in Innovation funds, local magnet schools, etc.), the constant issues, such as assessments and standardized curricula, continue to remind us that the form and function of schools have changed very little. That is, while technology has seen radical changes over the past 100 years (e.g., think of the technology of flight from 1911 to today—the Wright Brothers would be stunned looking at a Stealth fighter but feel right at home in a classroom), in general school design, teaching, and student activity have remained static. The rules and designs of schools morph reforms back to this static grammar we have all come to recognize as schooling. A technology grammar will need to be accepted by the public and the institution of education. If we want different outputs from schooling, technically competitive students, then what schools and schooling look like must change—and this change must be accepted as the new grammar of schooling.

Grand Challenge No. 2: Technological Coherence

Organizationally, schools must become more coherent. Coherence will make or break any reform effort, no matter the stakes (see Elmore, 2003). The prowess and power of an organization will always supersede individual efforts of reform. A key figure in a school's organizational coherence is the school principal. The principal should model the way and engage in a learner-centered evaluation of practice. School leaders should engage in the very technologies they want teachers to use. Why lead a meeting with a White Board when you demand that teachers integrate Smart Boards? Additionally, school leaders must look at educational technologies not as "tools" that may be "used" in a classroom. Rather, leaders must evaluate technologies through the lens of student learning. This is a different frame in which to evaluate teaching and learning. Looking at student engagement and learning, not teacher practice, liberates evaluators to focus on what works.

Grand Challenge No. 3: Technological Accommodation

Personally, there is a base knowledge that educators must acquire. Modern technologies must be taught by inquiry and doing. The advancements of technology "tools" are emerging at a ferocious pace. Open source programming, application design, and communication skills have created a new accessibility. Educators must learn not only a technology, but also the process for integrating it into their teaching and their students' learning (see Koeler & Mishra, 2008). Getting teachers to create their own avatars, to blog, to create Wikis or QR codes, or to edit video are examples of development activities that advance knowledge to skill. Such a transformation is difficult, and the change process has been compared to stages of grief (see Marris, 1974). Asking individuals to alter their professional practice will require breaking an existing code of pre-existing practices and schema. We want to avoid the assimilation of new practices and seek a deeper schematic change, or accommodation. This will require innovations that are meaningful, doable, observable, and compatible to one's practices (see Rogers, 2003). This change will come slowly over time and must begin in preservice training, survive the informal learning in the teachers lounge, and be reinforced and supported by the reflection and evaluation by the school leadership.

* * *

Perhaps Philip Jackson (1968) was a Vonnegut fan as well: "The greatest intellectual challenge of our time is not how to design machines that behave more like humans [we are already there], but rather, how to protect humans from being treated more like machines" (p. 66). The protagonist, Paul, in *Player Piano* lives through a neo-Darwinism where technology subsumes every aspect of living creating a dystopia. This takes away creativity, individualism, and in the end freedom. Of course, nobody is seeking such a world; the lesson is simple: Technological innovations in schools must seek more than efficiency and entertainment and be anchored in elements of creativity, collaboration, and communication. Here technology is liberating and equitable.

So where is the balance, the sweet spot, between technological bliss and dystopia? Can new technologies break the constraints of the institution, organization, and individual readiness triumvirate? Will any new technologies replace the chalk-smudged sleeve of the teacher of tomorrow? The answers to these questions will reside in the fit of technology with the institution's ability to reconceptualize what school looks like; the organization's ability to model, observe, and support innovations; and the match of technology and the individual's ability to accommodate new ways of teaching and learning. We cannot allow the intoxicating advances such as a player piano to replace the creativity of a composer and the artisanship of the pianist. We must regain control of the machines. To do so requires

us to reimage our current institution of education, our organization of schools, and expectations of teachers. To ignore both emergent technologies and the grand challenge to integrate them into teaching and learning is inexcusable.

Comment on QR Link

The QR code in the introduction signifies an effort to make our articles accessible in a different format as well as interactive. We welcome your comments on this sticky issue. QR technology is not new—not surprisingly, it is largely absent in schools today.

References

Cuban, L. (2001). *Oversold and underused: Computers in the classroom.* Cambridge, MA: Harvard University Press.

DiMaggio, P. J., & Powell, W. W. (1991). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. In W. W. Powell & P. J. DiMaggio (Eds.), *The new institutionalism in organizational analysis* (pp. 63-82). Chicago, IL: University of Chicago Press.

Elmore, R. (2003). Accountability and capacity. In M. Carnoy, R. Elmore,∂ & L. S. Siskin (Eds.), *The new accountability: High schools and high-stakes testing* (pp. 195-209). New York, NY: RoutledgeFalmer.

Friedman, T. (2007). *The world is flat 3.0: A brief history of the twenty-first century.* New York, NY: Farrar, Staus and Giroux.

Jackson, P. (1968). *The teacher and the machine.* Pittsburgh, PA: University of Pittsburgh Press.

Kling, R. (1996). Hopes and horrors: Technology utopianism and anti-utopianism in narratives of computerization. In R. Kling (Ed.), *Computerization and controversy: Value, conflict and social choices* (2nd ed., pp. 40-58). New York, NY: Academic Press.

Koehler, M. J., & Mishra, P. (2008). Technological pedagogical content knowledge: A new framework for teacher knowledge. *Teachers College Record, 108*(6), 1017-1054.

Levenson, W. (1945). *Teaching through radio.* New York, NY: Farrar & Rinehart.

Marris, P. (1974). *Loss and change.* New York, NY: Pantheon Books.

McLeod, S. (2011, Summer). Are we irrelevant to the digital, global work in which we now live? *UCEA Review, 52*(2).

Rogers, E. (2003). *Diffusion of innovation* (5th ed.). New York, NY: Free Press.

Thomas, J. S. (1932). Radio as teacher. *Michigan Educational Journal, 9*(7), 980.

Tyack, D., & Cuban, L. (1995). *Tinkering toward utopia: A century of public school reform.* Cambridge, MA: Harvard University Press.

Vonnegut, K. (1952). *Player piano.* New York, NY: Dell.

http://twitter.com/UCEA

Scholar 2.0: Public Intellectualism Meets the Open Web

Jonathan Becker
Virginia Commonwealth University

NOTE: I fought against including this text here. I have become so used to publishing directly to the Web that I felt shackled by the constraints of this medium. So, my idea was to include only the title and the QR code that Dr. Byrne-Jimenez provided in the introduction. The QR code points to the webpage where the larger narrative lives. I lost that wrestling match; not the first time. So, what follows is condensed from what you will find on the UCEA blog. My goal for what follows is to provoke you enough such that you will head over to the blog to not only "read" the larger narrative, but to also use the comment space for public discussion and as a modern form of peer-review. In fact, that would exactly support some of my points herein…

In a recent lecture before the European Organization for Nuclear Research (CERN), Harvard law professor Larry Lessig argued that the current infrastructure for scholarly communication is not consistent with the objectives of The Enlightenment.[1] Rather, the system is more consistent with the reality of the "elite-nment." That is, for the most part, knowledge created by academics is placed only in outlets that can be accessed only by "the knowledge elite."

Knowledge dissemination is not a new problem. What is new are the many simple solutions not being embraced by the academy. There was a time when we had to rely on publishing companies to help us disseminate the knowledge we generated. The Internet has changed that dramatically. When "Web 1.0" (the "static" web) came into being, one needed to be a coder and/or to master complicated software to self-publish to the web. However, now that "Web 2.0" is mature, nearly anyone can self-publish to the masses. If you can send an e-mail, you can publish to the web; literally, see, for example, http://posterous.com.

Thus, there has never been a better time to be a public intellectual. Why is it important to be a "public intellectual?" Rick Hess (2010) recently released his "public presence" rankings, which attempted to show which academics were contributing most to the public discourse in education. Hess justified the need for such a ranking system by suggesting that "it's the scholars who…can cross boundaries, foster crucial collaborations, and bring research into the world of policy in smart and useful ways." For as long as any of us can remember, we have been having conversations about making our work "policy-relevant"; how to better do applied or utilization-focused work…then? Now, we have the means to cast a wider net with our work than ever before.

If the notion of being a "public intellectual" discomforts you, perhaps you would be more comfortable with the idea of allowing your intellectualism to be public. In his seminal book on open access publishing, Willinsky (2005) argued for what he called the *access principle*:

---

[1] I am one sentence into this narrative and I am already hamstrung by the medium. If I were composing this online, I would embed the video of Lessig's presentation. I would also type Lessig's name in hypertext so that you could click on the hyperlink if you feel you would like to know more about him. Instead, all I can provide is a URL where you can find the presentation: http://vimeo.com/22633948