Technology as a Fence and a Bridge

Type: Horace Feature
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Source: *Horace* Summer 2009, Vol. 25 No. 1

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Note from the author: Over the past few years I've become increasingly curious about the role of technology in the classroom. I'm interested in teacher attitudes toward new technologies and whether technologies can help us think differently about teaching and learning. This article is adapted from a paper I wrote for a doctoral course on technology, society, and education at the University of New Mexico. Reading and research helped me understand what I experienced in my classroom and school.

At a recent meeting of humanities teachers, my Amy Biehl High School (ABHS) colleagues shared their frustration with our students' use of laptops. "They sit down, open up the screen, and it feels like a fence." I shared their discomfort. I get tired of asking students to close their laptops and attend to the lesson, the discussion, the reading, the white board, the screen, and most important, me. I want my students' eyes fixed on me and everything I present in the classroom. My feelings are hurt when it appears that my students would rather be doing anything besides engage in my scintillating lesson. "I say we take them away," a colleague suggested. "Let's use the mobile labs and have students check out laptops as needed." Although our agenda didn't permit further discussion, I know we'll think about this more deeply and set aside our perception of laptops (and the new technologies that will appear in our classrooms tomorrow) as a threat to classroom order, teacher authority, and our traditional position (figuratively and literally) at the front of the classroom. As Nicholas Burbles and Thomas Callister remind us, changes that accompany technology are neither good nor bad, they are both good and bad. The laptop is both a fence and a bridge.

Cell phones, laptops, the Internet and social networking sites make us anxious and magnify the gap between teacher and student. The influx of devices creates a clamor, but little clarity for schools. We're not sure what to do. At ABHS, headphone use was restricted on the premise that listening was antisocial and eroded community. But my observation revealed that students were splitting headphones and talking to each other about music. The only sense in which their behavior could be deemed antisocial is that students were not socializing with adults. A safety concern was also cited as a reason to ban headphones in hallways, despite the fact no one could cite an example of an injury. Instead of asking, "What are you listening to?" it was, "Hand me your headphones." This knee-jerk response is ominously similar to the policies of traditional high schools nearby. We're essentially telling our students, "What maters most to you—music, pop culture, your phone, social networking—doesn't belong in school." In banning the devices, we ban the conduit for the culture that matters to students. We may as well stick our heads in the sand. Cathleen Norris and Elliot Soloway put it bluntly, writing, "Change is coming; the impending mobile disruption will without question impact K-12. Educators can continue to be enforcers, battling with students over their mobile devices, wasting a unique opportunity in time . . . schools have a choice—build (and patch and patch) a Maginot Line against impending mobile disruption, or use the energy inherent in the disruption to revitalize education."

When I began investigating the issue, I discovered a heated debate and a spectrum of views. On one end is a professor who confiscated a phone, then "produced a hammer and proceeded to smash the offending device," describes Samuel Freedman. On the other end is a professor who "prefers to teach in classrooms with two screens—one to project his slides, and another to project a Twitter stream of notes from students." Although many teachers would consider this a recipe for disaster, the professor found that it enhanced his classroom. These two teachers represent opposite ends of the continuum of educators' responses nationwide.

Most schools have policies that limit or ban student use of devices and/or the Internet. Why are we so apprehensive? While administrators and teachers cite safety concerns and the distractions devices bring, another answer is that teachers "often see new technologies as threatening their scholarly authority, precisely because these technologies require a re-thinking of roles," writes Henk Huijser. When knowledge is no longer scarce, what is a teacher's role? Will students need us? If students can easily access information at home,

why come to school? In a trenchant analysis, Michael Wesch writes that "in some ways these technologies act as magnifiers . . . by allowing students to tune out more easily." What problems are being magnified? Wesch's answer is that we're facing a crisis of significance, "the fact that many students are now struggling to find meaning and significance in their education." I disagree with Wesch only slightly. It's not so much a problem of students finding meaning in education. They want to learn. It is a problem of finding meaning or significance in our schools and in my classroom. No wonder my students' laptops make me uncomfortable.

Then a colleague sent me Clayton Christensen's Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns. The term "disruptive" immediately resonated because I believe our teaching, classrooms, and schools desperately need disruption. In terms of where, when, and how learning takes place, too little has changed in the past 100 years. Most teaching and learning, even in charter schools, is based on an antiquated pedagogy. A Harvard Business School professor, Christensen coined the term disruptive innovation and developed a theory explaining the failure of once-prominent businesses in the computer and automobile industries, among others. As so frequently happens, educators became interested in this theory and its application to education reform. Perhaps technological disruption could disrupt a torpid public school system, as Christensen explains, "The most promising reforms hold the potential to move us away from the current monolithic education system to one centered on individual student needs. Efforts that have made noise in this challenging time focus on "disrupting class"—changing our fundamental assumptions about how learning occurs, when it occurs, and where it occurs. They are challenging and improving upon the long-established learning interaction between student and teacher in the traditional classroom setting, which has remained strikingly unchanged for generations."

Although theories originating in the corporate world can be problematic in terms of their applicability for schools, parts of this theory make sense. A helpful element—frequently missing from ed-tech debates—is the need for a valid, if basic, pedagogical framework. Christensen understands that students learn differently and that a central problem is the way school is arranged "in a monolithic batch mode system where all students are taught the same things on the same day in the same way." Unfortunately, Christensen neglects the social and emotional aspects of a teacher's work, for example, suggesting that new educational technologies, a new structure of the school day and a new role for the teacher will enable schools to "increase the number of students per live teacher." This is Christensen's cost-efficiency thinking, but the ways a teacher could personalize learning for larger numbers of students remains a question.

Christensen does not address race, class, gender, and language, and this is problematic: assuming that disruption will be driven by teachers, parents and students, Christensen neglects to consider whether everyone will have equal access to the necessary tools. Consideration of culture is similarly lacking, which is important to note as no tool is culturally neutral.

Disrupting Class captures perpetual enthusiasm for technology's potential to transform education. Given the myriad problems facing our schools, frustrations with reform efforts, and the phenomenally rapid development of new educational technologies, it is not surprising that the notion of disruption generates such fervor, and this is not the first time reformers have invested their hopes in technology. Seymour Papert clearly had a transformation in mind when he wrote, "computers serve best when they allow everything to change." Exactly what does a transformation of teaching and learning look like? Françoise Blin and Morag Munro put it this way: "When the introduction of a new object or of a new tool, such as a VLE [virtual learning environment] results in a serious alteration of the internal structure of the teaching activity system, we can infer that the activity system has been disrupted. If the disruption manifests itself through construction and adoption of new curricula, assessment procedures, teaching methodologies, resources and tasks, we can infer . . . that this disruption is expansive." In other words, technology has been constructively and sufficiently disruptive when teaching, learning, and schools look very different and when we have new answers to questions of when, where, and how learning takes place.

Although we need to balance our enthusiasm with skepticism, any potential for meaningful change warrants consideration. A set of recent developments increases the possibility of a real disruption: 1) the technology-immersed character of "digital natives," known as the NetGen, 2) a bottom-up push for technology's place in schools, 3) the interactive and participatory possibilities of Web 2.0, and 4) an increasing acceptance of the notion of social knowledge construction (as embodied in wikis). Primary among these factors is the centrality of technology in the lives of NetGen. Our students, so-called digital natives, are already discovering educational uses for emergent technologies. They are not waiting for permission. In the past, technology was

introduced by adults, but now students carry the devices into our classrooms. The push is bottom-up. Another critical factor is the interactive and participatory nature of Web 2.0, which encourages participation, creation, collaboration, and distribution. Indeed, a "new ethos" of knowledge and knowledge construction, seems to be emerging," write Michele Knobel and Dana Wilber. Once viewed as the exclusive domain of academe, knowledge is increasingly accessible and decentralized. Together, these trends may help fulfill the promise of technology to shift teaching and learning toward the 21st century. However, if employed without a valid learning theory, educational technologies will not disrupt.

Transformative disruption is much more likely to occur in Essential schools and other schools that nurture learning communities. The response of teachers to new technologies, whether they reach out with a hammer or a curious mind, can be influenced by schools culture and professional community. When a school is conceived as a community of learners in which curiosity is nurtured and where teachers are encouraged to collaborate, take risks, and experiment, technology will more likely disrupt positively. A teacher's view of a laptop as a fence or a bridge can be influenced by colleagues and the culture of the school in which they teach. Where the student perspective is front and center, technological innovation can flourish and contribute to a transformation of teaching, learning, and schools themselves. CES schools are well situated to harness technology for the transformation of teaching and learning because the CES Common Principles incorporate a valid, student-centered pedagogy, a teacher-as-coach model, personalization, and respect for students. Our schools are collaborative and reward risk-taking.

But we have to understand that emergent technologies are not just tools. These tools are changing us, our culture, and our schools. As Michael Wesch states. "This is a social revolution, not a technological one, and its most revolutionary aspect may be the ways in which it empowers us to rethink education." We should embrace educational technologies as another tool to transform our teaching, learning, and schools. Let's enthusiastically accept what matters to our students and figure out how to harness their interests. Let's not view technology just as a new tool for an old task, but as a new tool that can help us think differently about teaching and help our students think differently about learning.

One morning, I decided to take a few minutes to share with students what I've been learning about educational technology and more importantly, what I've been feeling about the laptops. I have the luxury of working at a school with a deliberately built culture of respect. My students listened. I still have to ask them to close their computers, but only once. Now my colleagues and I need to open ours.

Amy Biehl High School transforms young people from all walks of life into civic-minded college students while they are still in high school! Located in the heart of downtown Albuquerque in a 100-year-old historic building, ABHS is redefining the value of a high school diploma by providing a challenging curriculum and cultivating close relationships with students and families. In addition, close coordination with UNM, CNM and a host of community partners enables habits needed to successfully complete two relevant college classes and service initiatives. Our students are primed for success in life, wherever that may lead them, and their presence benefits our communities in Albuquerque and beyond.

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References

Blin, F., & Munro, M. (2008). "Why Hasn't Technology Disrupted Academics' Teaching Practices? Understanding Resistance to Change through the Lens of Activity Theory." *Computers and Education*. 50, 475-490.

Burbles, N. & Callister, T. (2000). *Watching It: The Risks and Promises of Information Technologies for Education*. Boulder, CO: Westview Press.

Christensen, C. M., Horn, M. B. & Curtis, W. J. (2008). *Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns*. New York, New York: McGraw Hill.

Christensen, C. M. & Horn, M. B. (2009) "The Best Education Disruption 0f 2008?" available online at http://blogs.harvardbusiness.org/on-innovation/2009/01/the-best-education-disruption.html

Conole, G., de Laat, M., Dillon, T., & Darby, J. (2008). " 'Disruptive technologies', 'pedagogical innovation': What's new? findings from an in-depth study of students' use and perception of technology." *Computers & Education*, 50(2), 511-524.

Huijser, H. (2008). "Exploring the Educational Potential of Social Networking Sites: The Final Line between Exploiting Opportunities and Unwelcome Imposition." *Studies in Learning, Evaluation Innovation and Development*. Available online at http://www.sleid.cqu.edu.au/include/getdoc.php?id=708

Freedman, S.G. (2007, November 7). "New Class(room) War: Teacher vs. Technology." *New York Times*. Available online at http://www.nytimes.com/2007/11/07/education/07education.html?_r=1

Knobel, M. & Wilber, D. (2009). "Let's Talk 2.0." *Educational Leadership*. 66(6) March, 20-24.

Norris, C. & Soloway, E. (2009). "The Impending Mobile Mega Disruption." District Administration. January 2009.

Papert, S. (n.d.) "Technology in the schools: To support the system or render it obsolete." Available online at http://www.mff.org/edtech/article.taf?_function=detail&Content_uid1=106

Papert, S. (1993). *The Children's Machine: Rethinking Schools in the Age of the Computer*. New York: Basic Books.

Staley, D. J. (2009). "Managing the Platform: Higher Education and the Logic of Wikinomics." *EDUCASE Review*. 40 (1) January/February, 36-47.

Wesch, M. (2009, January 7). "From Knowledgeable to Knowledge-able: Learning in New Media Environments." *Academic Commons*. Available online at http://www.academiccommons.org/commons/essay/knowledgable-knowledge-able.

Young, J. "Professor Encourages Students to Pass Notes During Class—via Twitter." *The Chronicle of Higher Education*, April 8, 2009. Available online at http://chronicle.com/wiredcampus/article/3705/professor-encourages-students-

This resource last updated: July 21, 2009