

By Grant Lichtman

Take Aim at Innov



ation!

Innovation shouldn't look like a tablet or a laptop. It should look like a learning environment where students—with teachers at their side—choose their learning targets and aim to hit them.

Last September, I packed up my Prius, left my patient wife, and drove around the United States for 89 days and 10,000 miles visiting 64 schools of every flavor and size to find out what they are doing to prepare our students for the challenges of a rapidly changing world. I asked questions and recorded learning with more than 600 teachers, administrators, and students.

In setting up the complex matrix of this trip, many of my hosts asked, “What would you like to see when you are here?” The journeys of discovery in my life have started with open goals and few preconceptions, so I left the agendas as open ended as possible, with one caveat: I was not interested in seeing a 1:1 laptop program or talking with teachers about their tablet rollouts.

As others have said, technology in learning should be as ubiquitous as air, and there is nothing innovative about students and teachers breathing. I like to put it another way (harkening back to my first book, *The Falconer*, that I started writing more than 15 years ago): I am a lot more interested in how effective archers are at choosing the *right* arrows and *right* targets than I am in the shape of their bows.

Technology Is *Not* the Innovation

Nearly every school I visited was doing something dramatically different than they were just a few years ago. Some were doing almost everything

differently, and some were innovating more cautiously. I want to give you a sense of some of those changes and discuss how they leverage technology, or should be driving our uses of technology more deeply in the future.

But here is a cautionary note of reality from the road: After a morning debrief with the principals, heads of school, or senior team, I frequently asked, “If I walked up and down your halls and asked all your teachers what the school is doing that is innovative, how many would talk about new technology initiatives?” Frequently the leaders would grimace and admit that it would be a common response. As a group, schools are still mired in the mindset that technology *is* the innovation, not that it is a tool *embedded in* innovation.

What Would Dewey Do?

During my TEDx talk (bit.ly/15LGQ0K) in February, I defined innovation as “preparing students for their futures, not for our past.” I came to that conclusion on a long drive across west Texas with 88 days in my rear view mirror. I immediately realized that I was quoting educational reformer John Dewey almost exactly from more than 100 years ago, and that *every* example of marvelous innovation that I had seen on my journey could have come straight out of Dewey’s playbook. At one point, I even threw out the idea on Twitter that if Dewey



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knew how to use an iPad, he would be right at home in the most innovative schools in America. A day later, I received a bit of digital handiwork from a third grader: a Photoshopped picture of Dewey holding an iPad. That young girl does not need to be told how to use technology to enhance her learning!

Flipping the Classroom Is Not Enough

The best example I could offer illustrating the difference between the bow and the archer in educational technology is the idea of a flipped classroom (read my post about this at bit.ly/126cFTm). “Flipping” a classroom is wonderful slang; as soon as we learn what it means, the image sticks. Flipping is about having students listen to or watch lectures at home without a teacher present to free up class time for questions, discussion, and the kind of face-to-face help that teachers can provide. This concept is revolutionizing learning in many classrooms, all for the good. It is a great arrow to have in the learning quiver.

But what if we *really* flipped learning? What if we flipped the learning relationship from teacher controlled to student controlled? Let’s call this *Flip 2.0*. Better yet, let’s call this the *back-flipped learning experience*, because reversing the responsibility of learning from the teacher to the student means we are going “back” to exactly what Dewey, Montessori, Parker, and the other giants of the Progressive Era preached more than a century ago.

My good friend and colleague, Bo Adams (bit.ly/ZNsFXj), among many others, speaks to the absolutely foundational need to put students in control of their learning:

I am more and more convinced that a single C—control—may prove the bedrock for the development of all those other C’s. For in the giving of control, I believe we provide student learners with more opportunities to practice the skills organically and authentically than if we assign them work organized into the seven C’s. Through the autonomy of control—motivated by the control of choice—we naturally invest ourselves in those seven C’s. When we feel in control, we learn to take control, and we develop our capacities to maintain good control.

Bo tells us how he asked his 8-year-old son what he looked forward to learning in school one day. His first reply: “I don’t know, Dad. The teachers are in control and decide what we’re going to do and learn today. I won’t know until I get there.”

Passion, Engagement, Experience

Dewey traced learning backward from passion to engagement to experience, ultimately placing control and responsibility for learning in the hands of the learner. How do we redistribute this control from teacher to student? What is holding us back? How can we best use our bows and arrows, including the technology bow, to find the target of true student control, ownership, passion, and engagement with their own learning?

If we are not asking questions like these, then my observations suggest that we are largely checking off the box marked “innovation” by swapping out the old belts of the Industrial Age conveyor for new ones.

What makes backflipping uncomfortable? I found the overarching reason is that we, the adults, have, over several educational generations, created a series of anchors that hold us away from the timeless lessons of Dewey. Adults have come to believe that *they* own the elements that define the Industrial Age mindset of education: time, space, and subject. As long as teachers define their relationship to the learning community as one of owning “my time, my subject, my classroom,” innovation is rare.

Students don’t have this problem. By nature they do not quantify learning into these packets until the traditional school system forces them into it. Only when the adults in schools find ways to cut these strings will innovation explode and the untethered teachers feel the weight of a false responsibility melt away.

Let Computers Do the Computing

How can technology help the backflip? I saw so many examples on my journey that I can’t possibly describe them in detail, but if you follow the links back through my detailed blog reports from these schools (learningpond.wordpress.com/grantlichtman), you can connect with the teachers and specialists who are making them happen.

At Presbyterian Day School (PDS) in Memphis, Tennessee, teachers have developed a remarkable system of differentiated learning in math and reading that tracks individual students, measures strengths and weaknesses, and gives both the students and teachers real-time feedback on how to surgically improve learning rather than teaching to some artificial mean.

As Sal Khan, founder of Khan Academy, has said, “Let’s let computers do what computers do best.” PDS is doing exactly that by using both third-party and home-grown software to track and map student progress over time at a remarkable level of detail.

At PDS and other schools, students as young as first grade develop content and products, share and comment on work with other students, and archive their products. That means that at age 6 and 7, they are already building digital portfolios. Teachers act as facilitators rather than content providers.

At the Pomfret School in Pomfret, Connecticut, I watched physics students set up problems and let the computer crunch the numbers while their teacher assessed results using video and VoiceThread, not the impersonal and inarticulate stroke of a red pencil.

Several schools I visited have created publicly accessible faculty assessment rubrics. Administrators post annual goals on a public site and invite staff to comment, question, contribute, and visit each others’ classes.



Many Schools Are Getting It Right

Does online learning lead to student engagement? Not necessarily. Answering canned questions on a computer is no more engaging than answering canned questions in person. But I visited schools where various types of online learning are truly changing the fundamental relationships among teachers, students, and knowledge. Many schools are getting it right with technology.

Here are a few great examples:

- At the Dalton School in New York, New York, a math teacher collaborates with teachers in other countries to create a shared problem-set environment where students solve problems together.
- At Brecknock Elementary School in rural Pennsylvania, third graders vie for a Tweeter-of-the-Day award, which encourages students to gain comfort with online collaboration.
- At Poughkeepsie Day School in New York, teachers lead parents through an exercise at back-to-school night to set up their own Twitter accounts and send their first tweets so they would know what their children were doing on social media at school.
- At the Cushing Academy in Ashburnham, Massachusetts, high school students maintain a class blog and notes on Google Docs so that they—and not the teachers—control the work and discussion after hours.
- At Baylor School in Tennessee, one teacher told me that he often watches active, engaged, highly appropriate student-led discussions about classroom topics scroll by well into the night in the class chat rooms.
- And at Flint Ridge School outside of Washington, D.C., when a math teacher followed his spouse to Chicago for the year, the administration saw an opportunity to leverage the time difference and is paying the teacher to serve as a low-cost evening math help desk that their students can access during after-school hours.

Embracing Student Control

So what is the technology bow-and-arrow good at? It is good at democratizing the creation and management

of knowledge, which can be controlled by either the teacher or by the student.

I watched students sit in a gorgeous videoconference facility listening to a teacher in some other part of the world and politely raising their hands and responding to the questions she posed. In another school, students stood and recited the parts of the human heart as they rotated images on their iPads at the direction of the teacher. At Franklin Community School in Indianapolis, Indiana, students in Don Wettrick’s revolutionary Innovations class are designing, refining, and prototyping projects of their own creation through social media outreach. By the time this article is published, they will have conducted a beta test and feedback of Google Glass in their classroom. At Mount Vernon Presbyterian in Atlanta, Georgia, a ninth grader told me how her class is working with the teacher to write and publish its own history book.

Asking the Tough Questions

Which of these are true backflips to the lofty vision of Dewey, where teachers let go the reins and embrace student control, and which are polished, retooled cogs on the Industrial Age model and mindset? Which schools are innovating, and which have checked the box marked *innovation*? Are the students asking more questions or fewer when they have access to technology? Are the students asking more questions than the teacher? Does the use of technology in the learning environment lead to more time devoted to student-student and student-led discussion? Does the use of technology decrease the amount of time that the teacher is the focal point of the classroom? Are teachers becoming co-learners and lead learners with their students, or have they just added some new grease to the same old skid?

Leadership is the single most important key to successful innovation.



Does the use of technology

Technologies to Try

Here are three ideas I share in many of my talks and workshops—three “technologies” that will utterly transform any classroom and will either save money or cost just a fraction of what we are currently spending on plug-in technology. Do you think of these as “technology?”

Paint every wall with IdeaPaint. It costs less than \$1,000 for a typical classroom, and you have to paint rooms anyway. Why should students of any age, but *particularly* the younger students, sit at their desks, hands raised, waiting to be called on to answer questions, when they could *all* be out of their seats, writing on walls with cheap dry-erase markers,

posing their own questions and sharing their answers with each other all the time? I asked students which modality they would prefer. Guess how they responded.

Buy desks with rolling castors.

At Norfolk Academy in Virginia, I watched a math class instantly form and reform—a flow of dynamic, networked collaboration that would cost thousands of dollars to replicate via plug-in technology.

Stop buying textbooks. To the extent allowed by your governance structure, take the money allocated for textbooks and pay your teachers a healthy stipend to develop their own course materials. Access all the free, accredited source

material that is readily available on the internet and proliferating at a remarkable rate. Ask students to help. What student would turn down a request from their favorite teacher to intern over the summer on this? Once built, the materials can be easily updated every year.

Aiming at Change

One mantra I repeat is that, contrary to what high-priced consultants and famous authors tell us, change is not always hard. Relative to the really hard things this world has to offer, organizational change is only uncomfortable, sometimes messy, and frequently complicated. We just need to use all the tools at our disposal—all the arrows in our quivers—to help us make it less uncomfortable.



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cable in the classroom

decrease the amount of time that the teacher is the focal point of the classroom?

Thirty years ago, few educators agreed that teaching students how to ask questions was more important than memorizing answers. Now it is widely accepted as one of the skills essential to students' future success. The ability to ask questions is perhaps the most accurate, incisive, and valuable arrow we have.

Let's think of digital technology as one of our bows, a tool we use to launch our arrows of questions, problems, inquiry, passion, creativity, and introspection. Like the English longbow, which revolutionized warfare in the 14th century, new technologies can improve our aim and allow us to reach targets that we only dreamed of reaching in the past. Our job is not to help the students pull the bow—they are already better at that than most of us. Our job is to help them learn which bows and arrows to use, help them strengthen their arms, and know when to use their arrows and for what purpose.

Here is a final takeaway from my many school visits and ongoing interaction with hundreds of school leaders in the past few months: Leadership is the single most important key to successful innovation. I did not find a single school moving forward with what we would call an innovative educational program where it was not visibly and intentionally supported by onsite leadership. Libraries have been written about leadership, and I won't repeat it all here but will instead reprise a very short blog post I wrote last May:

Unlike NFL championships, defense does not win in innovative environments. It just does not. Over time, offense wins. Education is undergoing dramatic evolution via innovation, possibly even mutation, in the words of Shoshona Zuboff and Jim Maxmin, where mutation is an evolution well

outside the conventional frame. Defense is not a strategy against mutation. Defensive strategies may work long enough for the leader to move to another job or retire, but they will not succeed for the organization in the long run.

Leaders who primarily ask *what* their organization is doing and *how* it can improve on that are largely playing defense. Leaders who ask what their organization *could* be doing and push their communities into *that* discussion are playing offense. Over time, offense is going to win.



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