

July/August 2011 MindShare Learning Report – Pedagogy Leading Technology: Plan for It!

There are a number of reasons why [Finland's education system](#) scores either number one or two in international testing. And one of these reasons is because they place a huge value on recruiting, training and sustaining their most valuable resource – teachers! Time and time again we hear that teachers have the single greatest impact on learning in a classroom, and yet we don't always give teachers the time to collaborate with their colleagues to plan their teaching day and this has a significant impact on student performance. In Finland teachers spend far less time with their students than teachers in the U.S. do, and presumably this would be true in Canada as well, however their students are obviously seriously outperforming their American counterparts. What does this have to do with the focus of this piece? A great deal! Read on!

We often get mired in the new and exciting without stepping back and taking account of the essence of that new and exciting thing, or philosophy. We can talk ad infinitum, or is that ad nauseum, about, for example, a new tablet and its capabilities or a new app that can do this or that without first understanding that the device or the software do not teach, or even necessarily open up avenues to deeper understanding, or understanding at all if a student is left to his or her own strategies to learn something meaningful. I can remember watching a teacher showcase a video where her students were playing with a math application on an iPad. She was a bit enamoured by the ability of one child to solve the math problem at hand. The problem however was that the student had discovered that one of the options had to be right and so if he tried each one without engaging in any sort of thinking process or problem solving he would at some point succeed and he could continue on with the game. This is not learning.

Recently I was part of a session with American educators discussing a new product that a certain company was interested in bringing to the educational market. The product has great potential and I for one would love to have this product in my hands now. But alas, it won't be out anytime shortly, if it comes out at all. The most interesting part of this session however wasn't the product, but the people discussing said product. To be honest, I was a bit taken back by the amount of time we spent talking about what the product could do rather than what we could do with the product. Indeed, a very slight nuance that has huge implications. Shouldn't we be looking at this product through a pedagogical filter? How would this product impact the delivery of curriculum, or better yet, the teaching and learning process? How could I seamlessly integrate this product into my teaching environment so that I could enhance higher order thinking skills? How could students use this product to embrace an idea, or synthesize their understanding of a concept, or demonstrate their understanding of a bigger idea in math or science? The ultimate value of the product is found in what it could do more easily, efficiently and powerfully to either enhance learning, or provide another avenue to helping students develop skills that might not be as easily attained using something different.

If we're going to have pedagogy lead technology then we must plan for it. And in order to plan for it we must make every effort to give teachers the opportunity to consider the options available to them in order to develop and implement a year-long plan that purposefully sees technology as something that needs to be integrated across the curriculum. I've listed five different things that can be done in order to have your pedagogy lead the technology through a concrete and cogent planning process.

1.) All top-down initiatives from language to mathematics and visual arts to science should include clear ways that teachers can integrate technology into the process of teaching and learning.

Let's be honest. There's not a great deal of effort made by our curriculum teams and by publishers to give teachers solid ideas to use technology in a high-order way. There are of course exceptions, and yes, many textbooks will have a technology component that teachers can use. The problem however is that many of these 'ad hoc' type suggestions do not think about the continuous way of integrating this technology, or the foci of a curriculum department is presented and delivered in ways that do not lend themselves to easily using technology to enhance the teaching and learning experience. What do you do? You avoid using technology or you spend a great deal of time rethinking or retooling the material so that you can harness the power of this or that technology. Curriculum leaders and those individuals responsible for pushing an initiative should be encouraged to produce material that is laden with good solid ideas of how a teacher might integrate the use of technology in the delivery and the use of technology to produce the desired results.

2.) As a teacher, develop your long range plans for your course, or your year, and then re-think the plan through the eyes of technology. How can technology help you create a more robust program? How might technology help you create a teaching and learning environment that involves collaborative working environments that involve higher order thinking skills more efficiently and powerfully?

I think the above is pretty self-explanatory however let me give you a concrete example. Let's say you have access to some iPads and you teach science. You want to go out into the field to do a pond study and collect data about the ecosystem that a pond supports. How could you use an iPad – or other tablet – to help you do this while creating an exciting opportunity for your students? The iPad or tablet has video, picture and sound capabilities, and it also has a port that supports various devices that can help record the various pieces of data that you want to collect. You can video your specimens and record your observations, take pictures and enter data either into a spreadsheet program or a word processing program. You could then come back to class and discuss the ways the pond ecosystem is supported, or is threatened, in ways that are engaging, involve collaboration and lead to problem solving in a broader way. Synthesis can occur, and students begin to see in real world contexts what they can do to help save these fragile ecosystems. As simple example, but doable, powerful and engaging!

3.) Create a technology integration group at your school. Have all teachers from beginners to experts collaborate on ways to effectively integrate technology across the curriculum.

Teachers know their content areas. What they don't know necessarily is how a piece of technology might change the way they deliver this content and make their classroom lives a bit more manageable and a bit more exciting for their students. Some of the most powerful and productive ideas that I've come up with occurred in dialogue with another teacher. And not necessarily a teacher who was comfortable with technology! Call it cognitive coaching or mutual encouragement to think outside the box, but whatever it was it was powerful. Why not create a group of teachers who meet at the beginning of the year and throughout each term sit

down and bounce ideas around. All ideas are encouraged, even if they appear to be a bit ‘out there’. You will find that you’ll be challenged to work out the nuances of your idea(s), or encouraged to re-think or re-design the use of a piece of technology, or you just might change your whole idea and head in another direction. Remember I stated that the Finnish system encouraged, supported and sustained their teachers so that they could be the real ‘change masters’ in their respective schools? Well, they were given the time to collaborate with their colleagues. They ‘co-laboured’ with each other because they know that working together means you can develop a far more comprehensive program than if you did it on your own. This is true with technology as well.

4.) Follow the Masters!

There are those who are integrating technology in meaningful and powerful ways. The pedagogy – the way of teaching and the philosophy of teaching – is leading the technology for these teachers. Pedagogy is the master and technology the slave. Arrange a time to come alongside this teacher for a period or a day and watch him or her in action. And ask questions! Create a personal learning community with the master and have them help you use the tools of technology to enhance, sustain, and empower your teaching. And then pass it on! Don’t become a passive learner; use what you’ve learned and pass it on to another teacher who might be reluctant, resistance or recalcitrant, but might ‘buy in’ because you were interested in helping out. Celebrate successes and deconstruct failures because no one was successful without first running down the road of failure.

5.) Finally, feed the mouth that feeds it all – keep up with the research in pedagogy and enhance and adjust your technology accordingly.

[John Medina](#), a developmental molecular biologist and a brain researcher, tells us that they know one thing about the brain. According to Medina the single most effective brain booster is exercise and yet we've created perfect 'anti-brain' environments – classrooms! Why is this important? Well, if I decided to avoid reading the latest research I might miss the simple fact that I could enhance my teaching by including in my teaching day opportunities for students to have regular aerobic exercise. Impractical, you say? Well, what about a classroom Wii that is set up for students to follow at 30-40 minute intervals? You're using technology and you're creating a teaching and learning environment that encourages a higher degree of brain function. Just a small bit of information can lead to a huge amount of change in the classroom, and you can use technology to help create a teaching and learning environment that uses the latest in brain research to improve achievement for students.

Thanks for reading! Keep challenging yourself, and others, and make every effort to let pedagogy lead technology by planning for it! This is the right way with the most satisfying outcome!

Timothy Gard

timothy.gard@tdsb.on.ca

Twitter: soligard