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**** On the Internet ****

Transforming Learning with Creative Technogogy: Achieving the Aha! Moment

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In starting this article about the interplay between technology and pedagogy, I wanted a term to combine the two whereby pedagogy would come first. I googled ‘pedagology’ and got no hits. Great, I thought I had coined just the term... until I realized there is a term andragology, meaning the study of the science of andragogy. Therefore, pedagogy would logically be the study of the science of pedagogy, so I tried the term in reverse.

When I found that the reverse-term ‘technogogy’ got 22,000 hits, I realized I’d come across the word before. There are many blogs containing that term, and many of the hits are related to ELT, for example Nik Peachey’s Web page at <http://www.technogogy.org.uk>. There is a posting by Zaid Ali Alsagoff (well known for his blog on Web 2.0 resources: <http://zaidlearn.blogspot.com>) defining technogogy as “the convergence of technology, pedagogy and content in the transformative use of technology to foster learning,” <http://elearningmalaysia.blogspot.com/2008/01/technogogy-convergence-of-content.html>.

Zaid has added here the notion of ‘content’ to otherwise the same definition in the first paper he is aware of on Technogogy, a keynote cited as Idrus, R.M. (2005). “From Facilitation to the Transformation of Learning: From Pedagogy to Technogogy,” from the 5th International Educational Technology Conference (IETC2005) in Sakarya, Turkey (see the correct link in Idrus & McComas, 2006).

It’s not surprising that ELT practitioners should be in the lead on co-opting a term such as technogogy, but I still find it remarkable that I can have all this information at my fingertips before I’m but halfway through my first cup of coffee in the morning. It’s not at all remarkable to be using Google, even though it does make possible access to knowledge that when I was younger would have required hours of tedious research through card catalogs and *Reader’s Guides* available only by going physically to a brick and mortar library across campus or across town. More remarkable still is that the library gave us access only to works that had made it through a publisher as arbiter of what we can find in the library; yet the Internet gives us access to a lot of that plus the extended knowledge of anyone with the wherewithal to post to a blog or wiki. And it’s not as Andrew Keen (2007) would have us

believe, that this exposes us to a lot of “amateur” drivel ... well perhaps it does, but then publishers let in a lot of drivel as well, but theirs isn't subject to the scrutiny of anyone with the wherewithal to leave a comment, and in aggregate, it's that free-for-all crowdsourcing of opinion that gives the blogosphere its edge in currency and credibility.

This is what Howard Reingold, in his list of five crucial new literacy skills, calls ‘network awareness’ (Rowell, 2010). It's access to that network of advice and opinion, trusted because it's vetted by peers who comment, that is the truly remarkable aspect of what you can find on the Internet. And yet you still hear (or I do) very knowledgeable people, professors, remark that computers are isolating, when undoubtedly the opposite is true. It's because computers are anything but isolating, because they bring people together in innumerable modalities, that they are transformative in learning. Yet this is not widely accepted as fact due to the ineffable nature of the process. Technogogy has to be experienced to be understood, and many simply do not grant themselves the opportunity to experience it; therefore they never achieve that aha! moment.

It's widely noted that there is lack of transfer between the social networking people do in their private lives and that which they apply to their professional environments. Therefore, use of Facebook, for example, to track friends and relatives and share photos and pithy observations is not necessarily to experience social networking in a transformative way for learning (though it is certainly transformative in the way people deal with relationships nowadays—breaking up is much harder to do when you have to update your status, redefine your friends and friends of your ex-friend, and cull through your photos posted online ;-). It's often the case that people who delve into social networks for buying books online, shopping at eBay, couch surfing, or finding apartments and good restaurants do not transfer these social networking skills into their professional spaces. This ability to transfer social networking skills from social to professional settings is just one of 10 paradigm shifts required of educators noted in Stevens (2010, see the revised version online, as presented in Slide 3, June 10, 2010: <http://www.slideshare.net/vances/shifting-sands-shifting-paradigms/>).

People who expose themselves to Web 2.0 technologies generally want to learn more about them, but those who do not blog, or use *Google Docs*, or bookmark with *Delicious* (to give a few entry-level examples) often cannot fathom what the fuss is about. Their ways of doing things seem perfectly fine to them, and if they are teachers, their students have been doing very well for years with the tried and true techniques, thank you very much. Teachers who don't buy into social media or use it to any great extent for their own learning can hardly be expected to model its use for their students.

Many students (and their teachers) in my own face-to-face workplace tell me don't feel they need Google Docs when they can share flash drives and email attachments. They don't need Delicious when they can bookmark in their browsers on their own computers (remember when organizing and sharing those bookmark files was our sole means of social bookmarking?). They don't see the value in blogs, resist blogging themselves, and don't see why they should refer to others' blogs to leverage their own learning. Because they tend to be not predisposed to utilizing social media with each other, let alone with students, it follows

that proponents of the use of transformative technologies in education are often preaching to the choir, to one another via their PLNs, or personal learning networks, and only those who have experienced the affordances of transformative networked learning firsthand can really understand what the benefits are.

These technologies only become transformative when their use becomes second-nature to the point where we and those around us use them in our normal workflow. When that happens, ways of thinking and doing change in dramatic ways. When the culture of an institute or network of peers changes significantly in such a way that what was once merely desirable is not only possible but opens new possibilities, this is transformative. Having had one aha! moment, users of transformative technologies tend to have another, then another. Doors open to other doors, and then things become possible that were concealed behind doors which were obscured by other closed doors before. Insights occur to those who have been through those doors that can't occur to those who have not opened even the first doors to see what is on the other side. Once the doors are wide open, imagination is freed, creativity is given fertile ground in which to thrive. Leaps are taken and then more leaps, and the connection with those left behind is sometimes lost as those who are delving into new technologies absorb more of the new cultures and make more and more connections that those who have not experienced those aha! moments are at a loss to understand.

Thus the real loss to an institute when Web 2.0 and other educational technologies are not encouraged is the potential for creativity. This is a loss that cannot be measured because it would be a measure of what would have happened 'if only.' Transformative creativity cannot occur in an institution where professional development is driven top down and limited to the ideas of people only within the confines of the institute, and often only to those with power to push their agendas. It thrives in an environment where conversations among stakeholders are to some extent socially networked, held in open spaces where everyone has a voice. Transformative development occurs within communities of practitioners intrinsically motivated to open doors and discover what lies beyond the doors they find on the other side, who have access to common spaces where they can share stories about their learning journeys.

In a recorded 15-minute multimedia keynote, Shelly Terrel says "when we want to transform education we have to share our stories and show how we became the innovative, passionate, motivated teachers we are today." She acknowledges that we are not all like this, that many of our peers need encouragement, but that sharing stories is key to transforming education to the point where we break out of existing cycles:

<http://teacherbootcamp.edublogs.org/2011/03/04/considering-the-curriculum-teachmeet-newcastle-keynote/>.

There should be no teacher left behind, but those still in the "cycle" that Terrel decries often don't know where to begin to bridge that gap. Colleagues in this situation often tell me they would like to bridge it, but feel hesitant to make those leaps. They feel vulnerable in social networking systems that frankly, few of us fully understand, or worse, leave newcomers exposed to failure and ridicule. Often overworked teachers argue that they don't have time,

that they need training (when what they need to know can be found readily online, along with communities of like-minded-peers eager to help them). They might rationalize that the leap really isn't necessary anyway. They don't see the need for it because those who have moved through multiple doors to the other side seem so far out of touch with the 'real world' left behind.

Whether this is a problem for those who incorporate educational technology in their teaching or for those who do not depends on who is controlling the paths to the doors of discovery. If those in control are progressive, there is impetus for everyone to move ahead, and those most progressive will put in place scaffolding to help the ones who wish to learn and develop. But if those in control have not experienced themselves the affordances of new technologies that facilitate social learning, then they might cling to the status quo and find it against their vested interests to encourage progressive use of those technologies, and those who attempt to use them anyway might find little sympathy or cooperation from their immediate peers. Lacking support from their immediate workplace, advocates of teaching through technology will experience frustration unless they connect with like-minded educators in the world at large, as many do!

How can these two worlds be bridged? How can teachers who are making transformative use of technology in teaching reach those who need assistance in understanding how to at least learn about the potentials for professional development and appropriate uses with students? Of course this is happening as we speak. The gap is narrowing; more people are making the leaps required. As Elizabeth Hanson-Smith used to say, in case anyone doubted this trend, "there will always be more technology" (personal communication with anyone who happened to be in hearing distance).

Resistance to advances in technology in education are not unique to this century. When I was involved in setting up a language department in Oman in the mid 1980's we allowed newly-hired teachers to choose whether to have on their desks a typewriter or a computer with *WordStar*, a word processor popular at the time. Many chose typewriters, though those vanished rapidly over the next few years. Of course, word processors were revolutionizing writing, not only in terms of speed, ease of revision and correction, and variety of text genres that an individual could produce, but how writing was taught as well. At those times there were teachers who clung to the notion that students should write out each revision of each paper they were working on, something to do with penmanship. I argued at the time that it was hypocritical to be teaching a process of writing that those teachers themselves were no longer using.

Change comes slowly, and is facilitated through constant and patient modeling by those who are incorporating new technologies in their own working lives. Terry Freedman made a good presentation on change agency for the first K12 Online conference (Freedman, 2006), and Kim Cofino has produced excellent posts on affecting change when administration is fully behind the process (e.g., Cofino, 2008). Other presentations archived at the K12 Online conference web site include inspiring examples of how schools can transform their learning

environment through embracing Web 2.0 and encouraging its use by students and teachers, and throughout the community at large (Carozza, 2009; Curtis, 2009).

More such examples abound in conversations in the podosphere. For example, in the episode of 21st Century Learning found at http://edtechtalk.com/ETT21_148, you can hear Peter Smith, head of the middle school at St. Andrews School in Savannah, Georgia, explain how the school recently underwent accreditation and were told they needed to upgrade their technology, so they gave iPads out to students and teachers, on the understanding that everyone would document their discoveries in open forum spaces. The process that allowed students and teachers to evolve how the devices would be used is an excellent example of how a learning community institutionalizes transformative learning.

The iPad rollout was transformative because it avoided the top-down model of change agency. Results would likely have been different had teachers been introduced to iPads in a presentation by management staff, given a one-off workshop, and told they had better start using them if they wanted to keep their jobs. Instead they were given the opportunity over time to model best practices and learn from one another. Only by going through an experiential learning process can the ineffable be shared.

Twitter is a good example of a tool that those who don't use it find difficult to comprehend, because only through using it are its affordances understood. I myself didn't see the value in *Twitter* until its use was finally modeled for me. In this excerpt from Stevens (2008) I attempt to elucidate the ineffable in describing how ...

I 'finally got' *Twitter* when I heard Jeff Utecht's presentation entitled "Online Professional Development," podcast as part of the 2007 K-12 online conference: <http://k12onlineconference.org/?p=205>. Jeff recorded his presentation as a description of what he was doing at his computer in Shanghai while walking us through how he was using *Skype* and other social networking tools to connect with his professional network from there. So he was crafting his presentation as a live Skypecast, and he mentioned that he had just put a message out on *Twitter* inviting anyone online to *Skype-in* and discuss with him how they were using these tools themselves. A few minutes later, he had a bite, as someone responded to his tweet and spontaneously joined him in *Skype*. The presentation then became a conversation which illustrated how Jeff's network functioned in connecting him with other educators to further each other's professional development through taking advantage of such opportunities to learn from one another. That was when I decided to start using *Twitter* myself.

Another good example of how modeling technology alters approaches to problems and changes the nature of the solutions people take for granted is webcasting. I first connected teachers online with participants at a face-to-face conference at the 1999 TESOL conference in New York, and the following year in Vancouver I was invited to give a live demonstration with student voices and avatars online as an "invited speaker" to an even larger audience. In

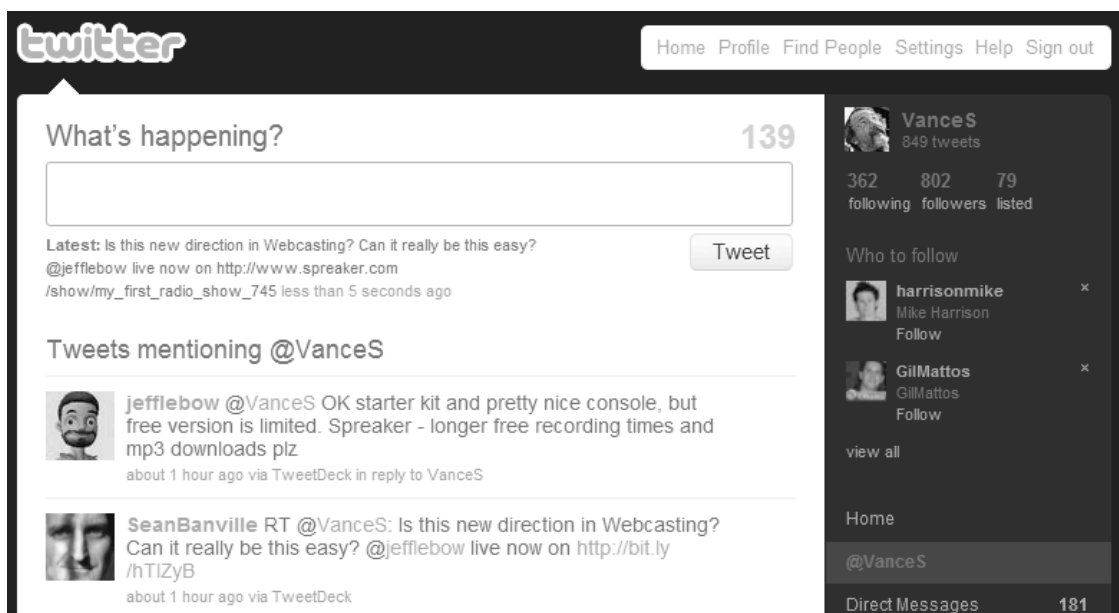
the years that followed my fellow online teachers and I appeared with our distance students often at both face-to-face and online conferences. In 2002 in Salt Lake City we were asked if we would require an Internet connection for our CALL-IS Academic Session. Most other presenters said that it would not be necessary but I insisted on it, and once the connectivity had been granted it then became possible to webcast the event live, which we did; so again an environment that had been perceived as localized became one that was opened up to the world because we took advantage of the technology that was available and let that transform our thinking about what then became possible. Because this leveraged our ability to model and hence to inform others, our use of technology in this way allowed those present to experience the process and thus became an example of creative technology, in Zaid's sense of "convergence of technology, pedagogy and content in the transformative use of technology to foster learning."

Flash forward and we find that my colleagues at annual TESOL conferences are now taking advantage of this capability as a matter of course. There is a list of webcasts planned from the 2011 convention in New Orleans here: <http://www.call-is.org/info/course/view.php?id=22>. The technology being used (*Elluminate*) is almost the same as it has been for the past decade, but the acceptance of it, familiarity with it, and understanding of what it does for the learning environment are now all generally understood, and the acceptance and use of synchronous presentation tools to connect peers with one another to produce learning outcomes is not at all uncommon now. A transformation has taken place.

This example of webcasting illustrates how a personal (or professional) learning network works. PLN is another of those terms that causes eyes to roll when you try and explain the concept to someone who is not in the habit of connecting with peers online. My own network extends not only into groups of people with whom I interact in email lists and *Nings* (<http://ning.com>) and other forums, but over communities where people meet in online spaces for presentations and conversations often resulting in podcasts. Sometimes I join them live but given the tendency for these gatherings to be recorded, I am happy to download the podcasts onto my mp3 player and join in the proceedings at my leisure asynchronously.

It was in the course of listening to one of those that I came to know about an online service with potential for webcasting, *Spreaker Online Radio*, <http://www.spreaker.com>. I listened to the podcast Parents as Partners on the EdTechTalk channel <http://edtechtalk.com/node/4909/>. Cale Birk, principal of South Kamloops Secondary School in Kamloops, British Columbia, Canada, was saying that he could hardly expect his staff to come on board with Web 2.0 if he didn't "roll up his sleeves" and get in there with it himself. As such he is an exemplary model for leading his school and community forward towards the transformation of learning into a mode where stakeholders don't just learn, but learn how to learn in the new age of digital literacies. He mentioned Spreaker as one of the tools he uses to set up online recorded tutorials for teachers and students in his school, so that if he can't explain something to them live, he can at least put it online and show them asynchronously when they land on one of his web sites.

Once you've experienced a few times the serendipitous workings of a PLN, you won't find the following to be entirely coincidental, but when I checked out the site and landed on live broadcasts, I found that Worldbridges (<http://worldbridges.net>) founder Jeff Lebow (see Lebow, 2006) was featured in a broadcast he appeared to be recording at that moment, so I sent a tweet out to my network to let them know that Jeff was trying out a new webcasting tool, and I included the link where people in our PLN could go to listen: <http://twitter.com/VanceS/status/43956127871938560>. Meanwhile, Sean Banville retweeted my post, and Jeff tweeted right back what amounted to a review of the product: <http://twitter.com/jefflebow/status/43957560960757760>. Thus works the system whereby, as David Weinberger (2002) puts it, small pieces are continually loosely joined.



Harking back to the fact that there are technologies we use in one aspect of our lives that we don't apply in our professions, the big question is: why is this technology not being used as a matter of course with students? Synchronous voice technologies *are* being used to link classrooms in different parts of the world using free programs such as *Skype* or *WiZiQ* (e.g. the annual earthcast at <http://earthbridges.net/>, Youth Voices at <http://youthvoices.net/>, and the Flat Classroom Project at <http://www.flatclassroomproject.org/>, to give just three examples). Still, relatively few teachers are familiar with those technologies, and often the technologies that enable them are blocked in schools. If this is inexplicable considering the potential for enhancement to learning, then the main problem is lack of understanding of how peer to peer interactivity can transform a learning environment, one symptom of what I have called elsewhere the "firewall of the mind" (Stevens, 2001).



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When that happens, when we as teachers apply social networking skills to learning from one another as a matter of course in our day-to-day workflow, and *then* apply those same techniques in practicing our profession with students, in the normal routine of teaching our day-to-day classes, a transformation will have truly taken place. For that to happen there will have to be general acceptance of creative technology applied to curriculum and syllabus design. Experience shows that such change comes slowly, but that it will come. Happily, in an environment where teachers and students are networked and sharing knowledge, the ecosystem is such that people in general help one another to achieve their learning goals. You might rightly say that this is the goal of teaching with or without technology, but when we share and model digital literacy skills with one another, aha! moments occur to bring us closer to the ideal, and these are greatly facilitated through social aspects of creative technology.

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