WELCOME TO FENELLA OLYNICK'S PERSONAL WEBSPACE (/)

NAVIGATING THE SWAMP OF DIGITAL INNOVATIONS IN EDUCATION

As a distributed learning (DL) teacher, I often have other educators and school district staff ask what it means to teach online. Very often the presumption is that there is no interaction between a student and the teacher, and to this day, some hold to the belief that a teacher is a teacher, and no special skill set is required for teaching online (hence the continual bumping into positions, which inevitably costs the school in lost productivity, training, etc.). I believe this view of technology and innovation perpetuates the belief that technology can be separated from teaching. However, I believe these two entities are threaded together, and the more skillfully a teacher is able to integrate the technology into a lesson, and the more a teacher is able to harness the affordances of the technology to bring about the desired outcomes, the more successful students will be.

> *Digital innovations have failed in two respects: they have 'put technology above teaching and excitement above evidence' (p. 63).*
>
> *As cited by Fullan and Donnelly (2013, p. 12)*

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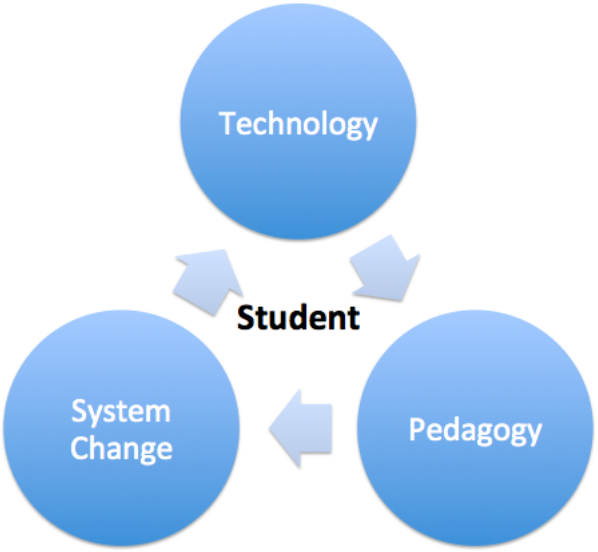
The Swamp?

I've just finished reading one of the best articles I've read in a while - an article on sustainable change called *Alive in The Swamp (http://www.nesta.org.uk/sites/default/files/alive_in_the_swamp.pdf)*, by Michael Fullan and Katelyn Donnelly, published by Nesta's Innovation Lab (http://www.nesta.org.uk/publications/alive-swamp-assessing-digital-innovations-education). I think the reason this article struck me as significant was that I've been learning about the use of technology in education for a number of years (I'm the first to admit, there's always more to learn than we'll ever manage to find time for), and I am sometimes a bit bewildered at decisions made, or not made, with regard to the implementation and purposeful use of technology in education.

In *Alive in The Swamp*, the impact of the Internet, global digital information, and learning platforms and technologies are compared to a swamp… noting the impact as still "murky". Fullan and Donnelly state (2013), "new digital creatures are being born everyday so the swamp is teaming with life" (p.26).

Fullan and Donnelly note that for revolutionary learning results to occur in this digital age, three forces must come together: **technology, pedagogy**, and **change knowledge**. Without all three forces, technological investments don't change the learning system. Instead, technological investments result in "acquisitions" and wasted funds; the technology is used without purpose and the ability to be scaled.

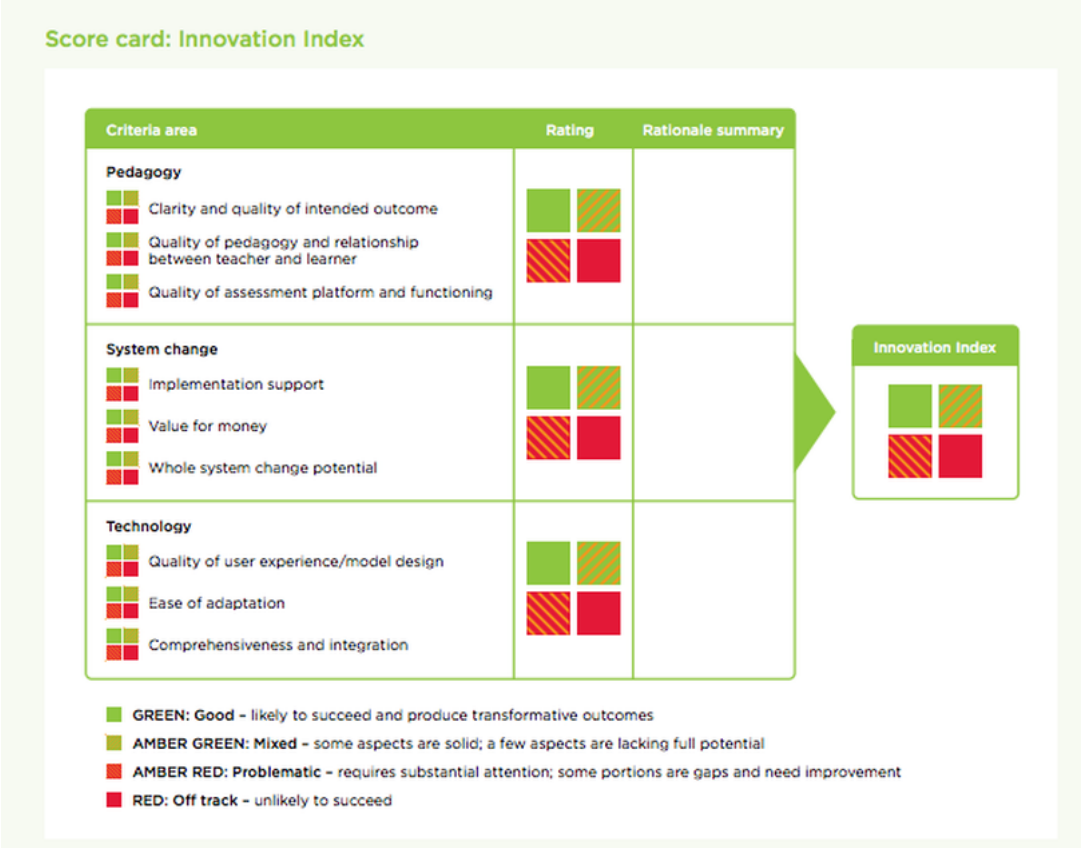
What does a learning revolution need? It needs three forces:



Adapted from *Alive in the Swamp (http://www.nesta.org.uk/sites/default/files/alive_in_the_swamp.pdf)* Figure 3 p.10, citing "The three forces of stratosphere (Fullan 2013)"

Another notable point in *Alive in The Swamp* is that it is important for the teacher to be a "**change agent**" as opposed to a facilitator. I found this to be an interesting distinction as much of what I have read over the past few years has noted that for 21st century learning, the teachers should be 'facilitators' of learning, guiding the students to seek and acquire knowledge on their own. The difference with the "change agent" role is that the **teacher is an "activator"** – i.e., the teachers and students are both 'teachers' learning from each other, and students are in charge of their own learning. The teacher and student make the thinking process explicit, and they challenge goals, while setting ambitious but achievable goals. When the teacher is the facilitator, the teacher might encourage inquiry-based learning, problem-based learning, and web-based learning by setting a question or problem to explore.

Fullan and Donnelly (2013) cite that digital learning contributes to deeper learning, and they note that 21st century learning skills fall into three domains: "1) **the cognitive domain** (thinking); 2) **the intrapersonal domain** (personal skills of drive and responsibility); and 3) **the interpersonal domain** (teamwork and other relational skills)" (p.11). To improve learning outcomes in response to changes in digital technology, Fullan and Donnelly have developed a comprehensive '**Innovation Index**' to evaluate and predict the transformative power of emerging digital innovations.



Innovation Index for Educators and 'System Changers': Appendix A from Fullan, M., & Donnelly, K. (2013, p. 28)

The components of the Innovation Index

The Innovation Index is comprised of three main components broken into three subcomponents for evaluation (nine subcomponents in total). This is said to allow for systematic and easy evaluation for almost any innovation. “Each component and subcomponent is given a rating on a four-point scale: green, amber green, amber red and red” (Fullan & Donnelly, 2013, p. 14). The authors make an interesting scientific note that a four-point scale was chosen because social science research has documented that three or five point scales tend to exhibit a tendency towards the middle of the scale.

Pedagogy – ***lead with pedagogy*** (pedagogy is the theory and practice of education, and the study and practice of how best to teach). The three subcomponents of pedagogy identified on the Innovation Index include:

1. Clarity and quality of intended learning outcomes and goals (especially with regard to ‘deep’ learning)

   Is the use of technology aligned with the leaning outcomes, and can progress be tracked and measured in real time?

2. Quality of the pedagogy itself, and the relationship between the teacher and learner

   Is the underlying theory and practice of learning sound, and will the pedagogy deepen learning in relation to the goals? How is the teacher’s role defined? Is the role of the teacher an ‘activator’ relationship: does the teacher fill the role of the “change agent”? Is there a student-teacher partnership, and is the pedagogy consistent across the system (i.e., school district)?

3. Quality of assessment platform and functioning

   Does it continuously reinforce learner engagement, so the learner experiences a sense of progress and accomplishment, while also targeting areas that need to be focused on for improvement? Does the platform provide evidence of efficacy?

System Change – criteria for an innovation to produce a whole system revolution
The three subcomponents of system change (http://edglossary.org/systemic-reform/) identified on the Innovation Index include:

1. Implementation support (technological and pedagogical) – As Fullan and Donnelly state (2013): “ Strategy and product design gets you 10 percent of the way and the remaining 90 percent is implementation” (p. 17).

   Implementation support includes support for technology, software, professional development (which must address technical and pedagogical knowledge and skills), mentoring, etc. It is important to ask, is the support based on a culture of learning?

2. Value for money – in order for digital innovations to be scalable, sustainable, and systemically embedded they must demonstrate value for money
3. Whole system change potential –according to Fullan and Donnelly (2013, p. 18) this requires four elements:
    1. Motivation for people to engage in change
    2. Continuous learning from failure and wrong paths
    3. Ability to leverage and learn with the collective group
    4. Emphasis on the very large scale

    'Simplexity' (a term used by Fullan and Donnelly) is outlined as being important, meaning there should be a small number of key components and goals (so the district or school system is not distracted by too many priorities), and these should be deeply integrated.

Technology – enables the innovation to enhance learning

1. Quality of user experience/model design – is the technology easy to use, engaging, intuitive, easily navigable, well designed, efficient, etc.? Does the technology accelerate learning?

    The best digital tools are participatory, engaging, collaborative, and co-creative

    Technology should promote deeper learning and be tied to leaning outcomes

2. Ease of adaptation – is the technology easy to update, modify and customize, and can it be used on multiple devices at any time (Internet, real time, etc.)?
3. Comprehensiveness and integration – is the technology integrated into the pedagogy and curriculum of the learning environment and school day in a seamless and comprehensive manner, and is the teacher seen as essential?

What is needed for whole system revolution?

For digital innovation to become soundly embedded and systemic, we need to address the question of how can the integration of learning and technology occur across the 'system' (i.e., district or school system). Without school-based or technology-enabled innovations being embedded in a school and district, whole system change does not occur. Could whole system change, or whole system revolution, be promoted by using a combination of the Innovation Index and a backward design model such as the Understanding by Design Model (UbD) (https://en.wikipedia.org/wiki/Understanding_by_Design) advocated by Jay McTighe and Grant Wiggins, which keeps the end goal in mind? Perhaps this might prevent the pitfalls that often exist (i.e., getting distracted by 'gadgets'), and instead it might channel time and resources towards innovations that will bring about true system transformation (realizing that failure is a necessary step in the learning process).

Reference

Fullan, M., & Donnelly, K. (2013). Alive in the swamp: Assessing digital innovations in education. *London: Nesta. Available online: http://www.nesta.org.uk/publications/alive-swamp-assessing-digital-innovations-education (http://www.nesta.org.uk/publications/alive-swamp-assessing-digital-innovations-education)* Retrieved from *http://www.nesta.org.uk/sites/default/files/alive_in_the_swamp.pdf (http://www.nesta.org.uk/sites/default/files/alive_in_the_swamp.pdf)*