

EDTECH Research

My Terminal Objective is to motivate teachers and move them from a role of content and program user to one of content and program creator. There are, I feel, underlying suspicions and fears on the part of educators in regards to technology in general. Ben Stern refers to this teacher buy in as the “Third Pillar of Tech Integration. “ (Stern, 2013) Currently, teachers use the programs that they are given and fill in the data. In my mind this one size fits all approach is counter-intuitive to the education process. Imagine telling a music teacher that she would be required to structure her classroom in the same manner as the science teacher or the woodworking teacher. The teaching process has historically followed a process of determine the facts, determine the method. This is why the Design and Develop phases follow the Analyze phase in the ADDIE process. Again referring to Stern, in order to complete the construction of the Third Pillar of Tech Integration, the Second Pillar, professional development, must be incorporated.

In order to incorporate this Second Pillar, I believe a fresh approach is required. Too often, professional development training concerns itself with software usage rather than content creation. This administrative approach limits teacher input and stymies creativity. In place of this I would offer an approach with the following enabling objectives:

1. Upon completion of the program, the teachers will be aware of the freeware available and be able to use that freeware to create suitable content for their particular area of expertise.
2. Upon completion of the program, the teachers will have an understanding of the computer programming process and be able to use programming emulators such as Scratch to create interactive student content.
3. Upon completion of the program, the teachers will have a working understanding of HTML 5 and Javascript such that they will be able to create interactive web pages to utilize within their classroom environment. This will include homework assignments and classroom activities.

Stern, B (2013). Teacher Buy-In: Third Pillar of Tech Integration. *Edu Musings*, . retrieved 10/15/2013, from <http://www.edumusings.com/teacher-buy-in-third-pillar-of-tech-integration/>

Even though this was a blog, the author was spot on with his theories of teacher education. He highlights that many schools systems have technology stacked in a basement simply because they lack the skills to use it. He defines the first pillar as possessing the technology, the second pillar as having the ability to use that technology and the third pillar as the acceptance of teachers that technology is a valuable teaching tool that can be used for the benefit of their students.

Efaw, J. (2005). No teacher left behind: How to teach with technology. *Educause Quarterly*, 28(4), 26.

Efaw outlines how West Point has been able to keep its instructors comfortable using technology despite the fact that its faculty changes every three years. He discusses training and mentoring programs that gradually bring colleagues into the technological fold.

Resnick, M., Maloney, J., Monroy-Hernández, A., Rusk, N., Eastmond, E., Brennan, K., et al. (2009). Scratch: programming for all. *Communications of the ACM*, 52(11), 60-67.

This article, written by one of the Scratch developers, not only outlines the goals of the program but also gives great hints on how to present Scratch to programming novices. Its approach is toward guiding children to programming, but in reality, the concepts presented hold true when teaching non-technological adults.

Niess, M. L. (2005). Preparing teachers to teach science and mathematics with technology: Developing a technology pedagogical content knowledge. *Teaching and Teacher Education*, 21(5), 509-523.

The article contains a number of case studies discussing methods to incorporate technology in teacher education. One term that is prevalent throughout is “Technology-enhanced Pedagogical Content Knowledge (TPCK) His paper is broken down into four parts, but essentially the author is advocating reaching teachers during their undergraduate studies to introduce them to technology. As this is a paper about Math and Science teachers, the task seems fairly easy, however, I wonder how his suggestions would fare when teaching those students who struggle with basic college algebra.

Burns, M (September 2010). *How to Help Teachers Use Technology in the Classroom The 5J Approach*. retrieved 10/15/2013, from Elearn Magazine Web Site:
<http://elearnmag.acm.org/featured.cfm?aid=1865476>

The author discusses the 5J's which are the cornerstones not only of technological learning, but andragogy as well. They are, “job-related, just enough, just in time, just in case and just try it. When utilizing this program, it will be necessary for me to overcome the teacher's fears. Additionally, and more importantly, I will need to show them what's in it for them. Specifically, I'll need to show them how technology will make their jobs easier and their classes more entertaining.