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GAMING AND CORE CONTENT: Conjoined Twins

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Over twenty-five years ago my family gathered around our TI-99/4A computer—with all of 16K RAM—playing a text adventure game. Our character was standing on a high cliff above a raging river that ran through an expansive canyon in the American West of the nineteenth century.

"Go back!" yelled my son. My niece, who controlled the keyboard, typed in "go back." The response was terse, immediate, and textual, "A 12-foot boulder blocks the path." "Turn right!" said Mother. Ideas and fingers flew. Time after time we tried every action and direction we could think of, to no avail. That is, until my nephew said what we'd all been thinking, but were too afraid to risk: "JUMP!" This was our final option, so jump we did… landing safely on the opposite bluff.

The Potential

Today's computer game screens bear little resemblance to the black-and-green screens of text adventure games, but the methods they employ are much the same. Story-boarding creates an environment (imagined in text adventures, illustrated in video games) that pulls in the participant much like a good book pulls in its reader. And much like a good historical novel might teach content about a period and its inhabitants, a good instructional video game teaches core content to those playing the game. I had played and observed educational games before, and had not been impressed. The games' main focus seemed to be figuring out a system rather than knowledge creation. I saw gaming as a way to inform, entertain, and stretch the minds of those playing the game. There was great potential here.

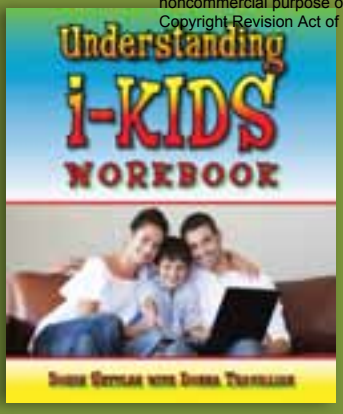
Research has shown that we learn best through doing, and gaming technology allows learning to be engaged, activated, and involved in an on-demand environment. Using well-structured games is cost-effective, accessible, and safe for students and the organizations that employ the games to teach. Many studies, particularly those done by the military, support this effectiveness, providing evidence of consistently rising test scores. Dexter Fletcher, a military researcher, has established a "Rule of Thirds" pertaining to technology-based instruction. In Marc Prensky's *Digital Game-Based Learning*, Don Johnson of the Pentagon is quoted as saying, "The rule states that the use of technology-based instruction reduces costs by about one-third and *either* [author's emphasis] reduces instruction time by about one-third *or* increases effectiveness of instruction by

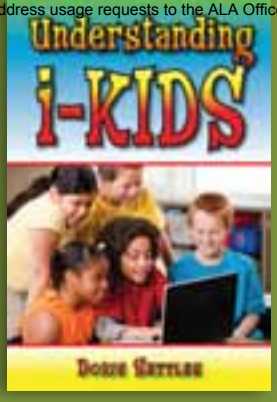
about one third....We've proven to ourselves that technology works. We've proven it academically, but more importantly, we've proven it operationally" (2001b, 382).

Integrating Assessment

I also remember realizing that we assessed our knowledge with every decision we made huddled around our TI-99/4A. Formative assessment occurred every time we entered a command. While the game also made decisions based on our input, as we went along we learned quite a bit about the environment built into the game. The *AHA!* moment came when the game actually allowed us to jump that canyon safely. We learned that in this environment, risk was less than in our own physical world. That had a huge impact on our future decision making and input for our character.

When we play an educational game, each action provides formative assessment that encourages and directs, but also provides summative assessment of our mastery of the knowledge required to reach higher levels. A game designed with that in mind yields not only a way to create/share knowledge in ways that transfer to a world outside the game's environment, but also a way to assess mastery learning—not only of core content, but also of the less-tangible and less-easily tested qualities of critical thinking, creativity, problem-solution, risk assessment, and more.





Understanding i-Kids *and its companion workbook by author Doris Settles, offer adults advice and guidelines on parenting their technologically adept children.*

Bringing the Technology to the Core Content

Each time I got excited about integrating a new technology into teaching writing to college freshmen, I usually found myself disappointed with the outcomes. Finally, I realized I had been asking the wrong questions.

Ask: "What is it I need my students to learn that the technology could help facilitate?" This is technology at its best, when it becomes wholly integrated into the service of learning. Not "learning first, fun second" as Bob Filipczak said (in jest) in an article in *Training* (1997), but learning and fun combined into a single experience where each exists for its own sake, each in the service of the other.

As we weave into education the strategies our *digital native* students use in their day-to-day lives, there are things we need to consider as students collaborate with us and each other to develop instructional technologies. We must:

- identify content/skills that are still relevant
- incorporate content/skills that are newly relevant
- investigate the ways technologies might help master those skills and how they are relevant to today's environment
- evaluate the technologies on the bases of relevance and mastery of skills, not glitz factor

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The Cultural Digital Divide

Technology is not just a subject, tool, or value added in today's digital society. Today's *digital natives* (Prensky 2001a) are born into a world in which they expect to be able create, consume, remix, and share material with the rest of the world—anytime, anywhere, all-the-time, instantly! While many adults are tech-savvy, that does not translate to being digitally literate. We know how to *use* programs but living our lives isn't dependent upon this knowledge. We each have a face-to-face life that is enhanced by technology, but our virtual life (each of our lives exists online in some capacity whether we acknowledge it or not) isn't necessarily enhanced by our face-to-face life. For youth, taking away the electronic connection to their virtual lives effectively brings their face-to-face lives to a screeching halt.

New ways of doing things, especially gaming technology with its addition of a FUN factor in learning, will always have its Luddite detractors. Some will be convinced with solid evidence of success, and some will always feel that learning should be a difficult and onerous task. But it is the mindful attention to blending the technology (fun) with the learning (task) that gives positive outcomes and successful knowledge creation. Marshall McLuhan has been credited with saying, "Anyone who thinks there is a difference between education and entertainment doesn't know the first thing about either." I couldn't agree more.

Doris Settles *loves technology. But she also understands the complexities, barriers, and risks that the advent of user-created content have wrought. Author of* Understanding i-KIDS *(Pelican 2011) and its companion workbook* Understanding i-KIDS: A Workbook for Grownups *(Pelican 2011), Settles has been recognized by Blackboard and the University of Kentucky as a teacher in the virtual environment, and by the U.S. Department of Justice as a researcher and advocate. She speaks regularly at regional, national, and international conferences. She is a self-avowed "naturalized citizen" in the digital society; through her writing, workshops, and professional development for educators, law enforcement personnel, mental health workers, and social workers, she continues to advocate real and meaningful shifts in how we work with youth to address these issues.*

Works Cited:

Filipczak, Bob. 1997. "Training Gets Doomed." *Training* (August 1). <http://business.highbeam.com/137618/article-1G1-20045575/training-gets-doomed> (accessed May 27, 2011).

Prensky, Marc. 2001a. "Digital Natives, Digital Immigrants" *On the Horizon* (October). <www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf> (accessed April 15, 2009).

———. 2001b. *Digital Game-Based Learning*. New York: McGraw-Hill.

———. 2010. "And You Think Some Teachers Are Resistant to Technology Today." *Teaching with Contests* (March 23). <http://teachingwithcontests.com/?p=1574> (accessed May 27, 2011).

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