

INNOVATION IN THE CLASSROOM



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More Tests, Please

No Child Left Behind Debate Misses the Point

By Henry Kelly

THE NO CHILD LEFT BEHIND ACT has created the wrong kind of debate about testing. Given the lack of new funding, many states are jiggering their tests to obscure the failure of poorly performing schools and undermining the accountability that was the core goal of the program. Others are attempting to opt out of the program. The process is wasteful, confusing to students, and fails to produce the information that education enterprises so badly need.

Instead, we should first engage in a national debate about the expertise students need to acquire in order to prosper in the 21st century, and only then settle on how best to measure their progress. The interactive methods used in computer games represent some of the most powerful ways to test newly acquired skills, but understanding why they are so useful requires a clear recognition of why our current testing procedures are thoroughly outdated.

Despite all the complaints about the numerous tests mandated by NCLB, the problem is not too many tests but too few tests. High stakes, standardized tests are an artifact of a mass production model imposed on education out of necessity during the last century. Traditional tests measure performance in situations that will seldom, if ever, occur in an actual job. Someone trained to solve problems working in isolation, with no access to reference material and no ability to consult experts, is largely useless in today's economy.

But consider the ideal classroom scenario: An instructor able to spend plenty of time with each individual student, constantly challenging them, asking probing questions, and presenting increasingly complex challenges tailored to the needs of each student. By the time a test is taken the student should have run through the material enough

times that they and their instructors have high confidence in success.

These powerful methods aren't used in standard classrooms for two obvious reasons—they're unaffordable and we continue to think of the classroom as they did 200 years ago. Yet a solution is available from an unexpected source—computer games.

The average U.S. teenage boy spends about 14 hours a week glued to computer games.¹ Most adults can't imagine how the lessons of Super Mario could be applied to high school science or history, but consider that a good game captures and holds a player's attention with a series of compelling goals, each slightly beyond the player's current abilities. A great game draws players in what designers call "the flow," where they will try, fail, and try again, working for hours to master the skills needed to win.

What's striking, of course, is that they're also being continuously tested. Tests are an integral part of winning, and players accept that they will fail before they master the skills needed to move on. If you keep crashing your simulated aircraft, you know that you've got to work harder. Winning at the most advanced levels of game play requires players to draw on a huge body of knowledge and experience.

Winning many games, moreover, often requires more than mastery of specific skills. They require precisely the skills that the Partnership for 21st Century Skills recently reported are in greatest demand in today's economy: gathering evidence, making decisions under uncertainty, evaluating options, and (in the case of multiplayer games) working effectively as a member of a team.²

The U.S. Department of Defense, which unlike most organizations is unembarrassed about having

its employees play (war) games, has come to appreciate the power of simulation-based games to teach and test individuals and teams. They have convincing evidence that skills acquired through simulations translate into performance in the field.³

Simulation-based instruction can reproduce the complexity, confusion, and tension of field conditions so faithfully that the success a soldier gains in the simulation translates directly into reliable performance during first real combat experience. This powerful transfer from simulation to practice has also been demonstrated for pilots and several areas of surgery.⁴ Surely it's possible to create challenges in biology, history, or engineering that can capture and hold attention.

Building software to teach and test complex skills is expensive. Several billion dollars were invested and lost in education technologies toward the end of the dot-com boom a decade ago, and investors have been wary ever since. Schools and universities are a notoriously poor market for innovations, in part because of an understandable reluctance to take risks with unproven approaches. But as a result, an enormous opportunity is being lost.

The federal government should fill gaps by funding basic science research, development, testing and evaluation that can be picked up by private investors. We can do this in new technologies for learning and create markets for robust new products... or we can continue to fool ourselves that our education system can be fixed with ad hoc testing standards. sp

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NOTES

- 1 Martin, Suzanne and Oppenheim, Koby. "Video Gaming: General and Pathological Use." *Trends & Tudes*. Volume 6, Issue 3 March 2007 Harris Interactive Inc. http://www.harrisinteractive.com/news/newsletters/k12news/HI_TrendsTudes_2007_v06_i03.pdf.
- 2 "Beyond the Three Rs, Voter Attitudes toward 21st Century Skills." October 2007. Partnership for 21st Century Skills.
- 3 Fletcher, Dexter. "Advanced Technology for Defense Training." Institute of Defense Analysis. June 2006. http://www.digitalpromise.org/newsite/Resources/Research/Dexter_Fletcher_Jun14.pdf.
- 4 Boosman, Frank. "Simulation-Based Training: The Evidence is In." July 2007. *Chief Learning Officer Magazine*. http://www.clomedia.com/content/templates/clo_article.asp?articleid=1874&zoneid=162.