

Really Good News About Your Children's Video Games

by Marc Prensky

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Research published by University of Rochester neuroscientists C. Shawn Green and Daphne Bavelier has grabbed national attention for suggesting that playing “action” video and computer games has positive effects – enhancing student’s visual selective attention. But that finding is just one small part of a more important message that all parents and educators need to hear: video games are not the enemy, but the best opportunity we have to engage our kids in real learning.

Any observer knows that the attitude of today’s children to video and computer games is the very opposite of the attitude that most of them have toward school. The amount of time they spend playing computer and video games – estimated at 10,000 hours by the time they are twenty-one, often in multi-hour bursts – belies the “short attention span” criticism of educators. And while years ago the group attracted to video and computer games was almost entirely adolescent boys, it is now increasingly girls and all children of all ages and social groups. One would be hard-pressed today to find a kid in America who doesn’t play computer or video games of one sort or another.

The evidence is quickly mounting that our “Digital Native” children’s brains are changing to accommodate these new technologies with which they spend so much time. Not only are they better at spreading their attention over a wide range of events, as Green and Bavelier report, but they are better at parallel processing, taking in information more quickly (at “twitchspeed”), understanding multimedia, and collaborating over networks.

What attracts and “glues” kids to today’s video and computer games is neither the violence, or even the surface subject matter, but rather the learning the games provide. Kids, like and all humans, love to learn when it isn’t forced on them. Modern computer and video games provide learning opportunities every second, or fraction thereof.

On the surface, kids learn to do things – to fly airplanes, to drive fast cars, to be theme park operators, war fighters, civilization builders and veterinarians. But on deeper levels they learn infinitely more: to take in information from many sources and make decisions quickly; to deduce a game’s rules from playing rather than by being told; to create strategies for overcoming obstacles; to understand complex systems through experimentation. And, increasingly, they learn to collaborate with others. Many adults are not aware that games have long ago passed out of the single-player isolation shell imposed by lack of networking, and have gone back to being the social medium they have always been – on a worldwide scale. Massively Multiplayer games such as *EverQuest* now have hundreds of thousands of people playing simultaneously, collaborating nightly in clans and guilds.

Today's game-playing kid enters the first grade able to do and understand so many complex things – from building, to flying, to reasoning – that the curriculum they are given feel like they are being handed depressants. And it gets worse as the students progress. Their “Digital Immigrant” teachers know so little about the digital world of their charges – from online gaming to exchanging, sharing, meeting, evaluating, coordinating, programming, searching, customizing and socializing, that it is often impossible for them to design learning in the language and speed their students need and relish, despite their best efforts.

An emerging coalition of academics, writers, foundations, game designers, companies like Microsoft and, increasingly, the U.S. Military is working to make parents and educators aware of the enormous potential for learning contained in the gaming medium. While “edutainment,” may work for pre-schoolers, it is primitive when it comes to the enormous sophistication of today's games. We need new and better learning games, and these are finally beginning to appear. Microsoft has sponsored a “Games-to-Teach” project at MIT which is building games for learning difficult concepts in physics and environmental science on the X-Box and Pocket PC. Lucas Games has lesson plans to help teachers integrate its games into curricula to teach critical thinking. A UK study by TEEM (Teachers Evaluating Educational Multimedia) has shown that certain games can help youngsters to learn logical thinking and computer literacy. Given the almost perfect overlap between the profiles of gamers and military recruits, the US Military uses over 50 different video and computer games to teach everything from doctrine, to strategy and tactics. “America's Army, Operations,” a recruiting game released for free in 2002, now has almost 2 million registered users, with almost a million having completed virtual basic training.

Academic research into the positive effects of games on learning, which not so long ago sat unread on the shelf, is being noticed by national media. Theoretical and practical guides such as “What Video Games Have To Teach Us About Learning And Literacy” by Professor of Education James Paul Gee, and my own “Digital Game-Based Learning,” are now on bookshelves. Experts, such as former Stanford CFO William Massey, who created the learning game “Virtual U.” are working with game designers to build games that communicate their knowledge and experience. Foundations like Sloan, Markle and others are funding these efforts. The Woodrow Wilson school has begun a project called “Serious Games” to increase the use of gaming in public policy debates, picking up an effort that began 10 years ago with “Sim Health” from Maxis.

Yet despite all the findings, research, and cries for help from the kids in school, many parents and educators still tend to think of video and computer games as frivolous at best and harmful at worst. The press often encourages this with headlines about “killing games” when in fact two thirds of the games are rated “E (everybody),” and sixteen of the top 20 sellers are rated either “E” or “T (teen)”. To counteract this “name prejudice,” users and funders of today's “new” educational games often refer to them by “code” names, such as “Desktop Simulators,” “Synthetic Environments,” or “Immersive Interactive Experiences.”

Yet what these new, highly effective learning tools really are a combination of the most compelling and interactive design elements of the best video and computer games with specific curricular content. The tricky part is doing this in ways that capture, rather than lose, the learner's interest and attention. We are now becoming much better at this. The money and will is there to do it, and our students are crying for it.

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