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DIGITAL GAMES AND LIBRARIES

We live in the midst of high-risk complex systems like global warming, a global economy, and global conflicts among civilizations and religions. The pace of change is faster than it has ever been. To succeed in this world our children need 21st-century skills. Reading is most certainly one of these.

But today reading keeps new company as it sits alongside digital tools that are transforming learning, innovation, and the production of knowledge. Furthermore, today a new "school system" exists outside of school in homes and in popular culture, a system where a new paradigm of 24-7 digitally fueled learning exists in direct competition with schools (Gee 2004). For many young people this paradigm is the source of the sorts of 21st-century skills that are not even on offer in many public schools. In this article I will argue that school libraries of the future will need to supply young people, especially those from less affluent homes, with digital tools, not as standalone entities by themselves, but as part and parcel of rich social activities and mentorship.

Let me give but one example out of many possible of this new paradigm of out-of-school learning (Gee and Hayes 2010, 2011). The Sims is the best-selling series of video games in history, a set of games where players build families and communities. Players can buy houses, clothes, and furniture in stores, or they can make items themselves with design tools that come with the game or by using other tools like Adobe Photoshop. Players can also create albums with pictures of their "Sims" (their artificial people) accompanied by text.

Some players leave the game to join interest-driven sites on the Web where they specialize in designing landscapes, houses, clothes, or furniture, which they then share with other players to use in their games. Enthusiasts also give each other challenges to play the game in a certain way (Gee and Hayes 2010). For example, one player who called herself "Yamx" gave other players the following challenge on one of many interest-driven sites devoted to the Sims:

Sims 2: Nickel and Dimed Challenge

This challenge was inspired by, and is named for, the book *Nickel and Dimed* by Barbara Ehrenreich (which has nothing whatsoever to do with Sims, but is nevertheless highly recommended). The idea is to mimic, as closely as possible, the life of an unskilled single mother trying to make ends meet for herself and her kids.

The Goal:

Raising your kids successfully until they're old enough to take care of themselves. If you can get all children to adult age without anyone dying or being taken away by the social worker, you've made it. (x3Carli 2010)

Ehrenreich's 2001 book is about how hard it is to be poor, how much struggle and intelligence it actually takes. Simulating the life of a poor single parent is by no means easy in the Sims. The game is a commercial entertainment game and since being poor is not fun, living a life of poverty in the game is difficult. So Yamx wrote a long "manual" that stated the rules of the challenge and how players could adapt their game play and the technology of the game to better represent the life of a poor single parent. She and the others had to think carefully about how the rules of play would work and how the Sims as a piece of simulation software worked. They debated these matters as a group and made changes as they were needed. Players who "won" the challenge had to use the album function that comes with the Sims to write a sort of graphic novel about the story of their family and about how the rules of the game and the Sims as technological simulation interacted with that story.

This challenge is not a social studies assignment. The players are doing it for "fun" as part of playing and interacting with each other over a commercial entertainment game. Nonetheless, they engaged in a good deal of thoughtful reflection of and discussion on poverty and how one could simulate such a life at the level of emotion and not just physical realities to gain a real sense of empathy. Indeed, several women wrote to the discussion board that they are or were poor single parents and that this challenge captured their experiences in powerful ways. One woman even said that she was going to keep the challenge to show her child, when the child gets older, what it was like to be a poor single mother and how she managed the struggle.

Challenges like this are played by people of all ages. In the one above, many mothers and daughters played the challenge together. In most cases today video games are part of a larger social system where players of all ages join an interest-driven passion-fueled space on the Web, spaces I have elsewhere called "affinity spaces" (Gee 2003, 2004, 2007; Gee and Hayes 2010). In these spaces players take the game further to engage in challenges in a game like the Sims, to explicate the physics in a game like Portal, to work out the statistical underpinnings in a game like World of Warcraft (an activity called theory crafting), or to redesign ("mod") the game in a game like Half-Life, in the act sometimes designing whole new games. Games today are a combination of software (the "little g game"), and social and learning activities around the game (the "meta-game"). The two together I call the "big G Game" (Gee and Hayes 2011).

Where Do School Libraries Fit In?

Before digital media appeared on the scene, good libraries served, as they still do today, as a great social equalizer for reading. The sheer number of books to which a child has access is a strong predictor of how good a reader that child becomes (Krashen 2004). Affluent children often have a great many books at home. Less well-off children have had to rely on the library at school and down the street. The quality of these libraries correlates with children's scores on comprehension tests, including NAEP (National Assessment of Educational Progress) assessments, often called the "Nation's Report Card" (Lance 2004; McQuillan 1998).

Poor children are still behind in reading, so quality libraries are still crucial. But poor children are now also falling behind in new and important 21st-century digital media skills. Access to digital media—including, to the surprise of many, video games—is now crucial too. Just as with books, the more the better, but with one very important proviso. What is crucial for a child is not just having access to digital media, but also having access to good mentoring around that media.

Susan Neuman, a former Deputy Secretary of Education, and her colleagues have shown, in a study on digital media in libraries, that children from well-off families benefit more from digital media than do children from poor families (Neuman and Celano 2006). Well-off parents mentor their children to use such media to challenge themselves, persist past failure, and engage in challenging reading related to their digital interests. This is a form of mentorship librarians of the future will need



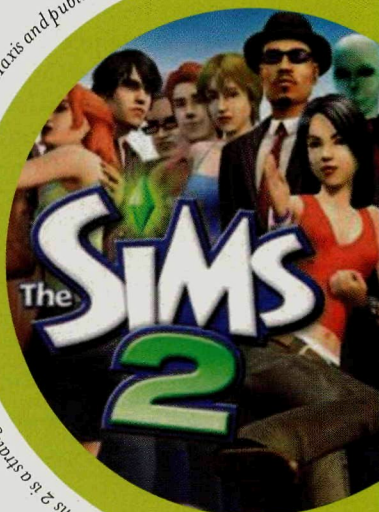
to offer many children whose parents are not with them at the library or who do not get such mentorship at home.

What Are the Benefits to Students?

Just as many different kinds of print media exist, many different kinds of digital media also exist. Video games are rich with possibilities. Good video games are first and foremost complex and challenging problem-solving spaces. While people often think all video games involve shooting and killing, many involve a wealth of other things.

Civilization, Age of Mythology, and Rise of Nations force players to think on a large scale about history, development across time, and civilizations. Sim City, The Sims, Sim City Societies, and even Animal Crossing for very young children ask players to build and sustain cities and communities. Games like Yu-Gi-Oh and Pokemon engage young children with complex language, numeracy, and strategic thinking. Age of Mythology players regularly read and write about mythologies

The Sims 2 is a strategic life simulation computer game developed by Maxis and published by Electronic Arts.



Half-Life 2 is a first-person shooter video game developed by Valve Corporation.



across the world. Some gamers write strategy guides for the games they play—technical writing at its best—and share them on the Web.

A massive multiplayer game like the popular *World of Warcraft* requires players to engage in intricate collaboration and even to organize themselves into the equivalent of today's high-tech "cross functional teams." On such teams each member must be a specialist capable of understanding and integrating with each other team member's different specialty. Constance Steinkuehler at the University of Wisconsin has argued that *World of Warcraft* players even engage in "scientific thinking" when they test out game theories, strategies, and new tools—some of which they design themselves—and discuss their innovations with each other on discussion boards (Steinkuehler and Duncan 2008).

In *Spore*, designed by the game genius Will Wright, players spend as much time designing creatures, towns, cities, and terraforming planets as they do playing the game. In fact, thinking like a designer is the central "game mechanic" in the game, as it is in Sony's *Little Big Planet*. Furthermore, educators are developing learning games for 21st-century content and skills, games such as David Shaffer's "epistemic games" at the University of Wisconsin. In Shaffer's games—played partly on screens and partly in the real world—young people act, think, and learn like urban planners, engineers, arbitrators, or science journalists (Shaffer 2007).

But, remember that what is really at stake for higher-order learning is what I call the "Big G Game," that is, the game as a piece of software integrated with all the social activity around it organized for participation, production,

and proactive learning. Games are digital invitations to rich social interactions. In the case of reading we expected libraries to stock the books that disadvantaged kids could not own. Today, they are the perfect places to stock not just the games but the big G Games—the skills and mentoring around digital media—that disadvantaged kids aren't getting. Indeed, this rich environment was always and still is important for books as well—not just stocking the books but also providing disadvantaged kids with the hive of social activities around books, leading to higher-order literacy and learning. Most school librarians already do their best to provide a rich book-related milieu; extending this rich environment to include digital media is also essential. Otherwise, we will open up a large digital gap to go with the reading gap we are already trying to close. School and public libraries are good places to remediate both gaps at one and the same time.



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