

Games for Education: 2008

Learning via computer games: the very idea can seem surreal or outrageous. Yet for the past five years, a movement has been afoot to examine how digital games work as pedagogical devices. Starting with the publication in 2003 of James Paul Gee's landmark *What Video Games Have to Teach Us about Learning and Literacy*, faculty, technologists, and librarians have been exploring how we can learn from and also teach within computer games. This column will survey what this movement has discovered.

The Norton Anthology of Computer Gaming

Approaching the world of gaming is like starting to study world literature. A huge, still-burgeoning set of texts brings up questions of selection and canonicity. In addition, just as each language offers its own linguistic challenges, which can be only partially overcome by translation, gaming has differing platforms: for laptops, for mobile phones, for devices connected to TVs (Xbox, PlayStation, Wii) or to PCs (*Dance Dance Revolution*), as well as toys notionally connected to the Web (*WebKinz*), mobile phones, and portable devices (PlayStation Portable). And like languages, games are globally distributed.

Genres complicate the survey even more. Much as literature offers genres at different levels (novel, short story, poem, play; science fiction, romance), gaming too presents a typology of play: platform jumpers, first-person shooters, real-time strategy (RTS), puzzle games, casual games (small and playable while doing something else, such as work), minigames

(games within games), sports games, and alternate reality games (ARGs). One can even compare audience reaction in both literary study and social gaming. *Massively* multiplayer online games like *World of Warcraft* have become so widespread as to be lovingly and productively parodied with the recent *Passively* Multiplayer Online Game (PMOG). Similarly, how people play games, which people play which games, and the effects of gaming on players form a contentious field of study, not unfamiliar to scholars studying the long centuries of controversy surrounding various literary texts. The ancient question of how a text shapes its reader has returned in full force with games and their players.

We can push the literature-gaming analogy one step further by considering economics. Literary critics have looked at markets for many years, from studying the audience for and marketing of texts to evaluating the significant body of Marxist criticism. Trying to understand gaming can involve a similar mindset, and not just because gaming is big business. Social games often have complex economies, leading to an unsurprising variety of speculation and inflation, currency trading between games, and even the rise of "gold farming," whereby shops play as a game character to advance their powers and then sell the more powerful being to hurried players.

Gaming is, in short, a vast and complex world.

Grand Theft Learning Object¹

Games can be learning objects. This assertion summons up two strands of thought concerning computer-mediated

teaching and learning. First, many of the goals for the learning objects movement can be transferred to games: digital objects from which learners can learn and that can be repeated. Second, we now have two decades of practical experience in using and thinking about digital objects in teaching, even if we have not always applied *learning objects* as a term to describe them: CD-ROMs, podcasts, videos, assigned web pages, e-reserves, files on USB drives, GIF or Java applets. If we emphasize the replayability of learning objects, the idea of computer games as items to learn from is not a new thought at all.²

One basic point bears repeating: some games teach some subjects that are recognizably intellectual and academic. *Civilization* and *Rise of Nations*, for example, both teach models of social, political, and historical development. At a different level, many games teach skills that have been identified as necessary for learning or for post-higher-education life: teamwork, information seeking, self-assessment, communication, numeracy, spatial literacy. Playing *EVE Online*, for instance, requires learning about economics (business operations), physics, teamwork, long-term planning, and communications—for starters.

At yet another level, games can tie into constructivist pedagogy. First, if players *reflect* on their learning in a productive way—through blog posts, discussion threads, wiki comments, podcasts—they can be seen as helping to construct their learning. Second, if learners *create* computer games, they learn both gaming and content. This can involve "modding" a preexisting game, writing a game from

scratch (in Flash, Inform, or other tools), or creating a minigame within a larger platform (a treasure hunt in Second Life, web content missions in PMOG). This constructivism can be personal or can be based on the student-instructor dyad, but it may also be social, taking advantage of multiplayer gaming and the galaxy of social networking tools. Like game players, students can learn with others—peers, teachers, and those who learn from them—publicly or in restricted groups.

Related to the idea of games as learning objects is the connected, academic use of computer games in terms of media or information literacy. First, as a growing number of people play games over their lifetimes, gaming influences how they perceive and use information, much as does a lifetime of reading books or watching television. The authors of *Got Game* argue, for example, that gamers' sociology differs from that of non-gamers.³ Second, digital games are playing a larger role in the global media landscape. Political games have been on the scene in the United States since Howard Dean's 2003 presidential campaign games and now can be found in many different political niches. There are games simulating and games criticizing the war on terror, games for mitigating climate change, and games for organizing a city religiously. Like media literacy, gaming should be considered an important way to help students apprehend print, TV, radio, and other media.

At a more formal level, games have emerged as an object of academic inquiry. The field of game studies boasts professional conferences, peer-reviewed articles and books, a growing number of faculty positions, and numerous programs. Coursework naturally follows from this, in the old flow of research to curriculum. Games as content appear in other, related fields: media studies, narrative studies, multimedia design, and computer science, to name a few. Moreover, given the increasing presence of games in culture, they can be used as touchstones in apparently unrelated fields, such as a campaign game in a political science class or *BioShock's* plasmid science in a biology section. Games thus function along the classic lines of pop culture, constituting a shared culture from which instructors

and students alike can draw examples for presentation and discussion.

At a different level, one both more abstract and also practical, we can learn from *how* games teach. As Gee points out, games teach players from necessity. That is, players need to learn a game's rules, along with the content or world it presents behind or through those rules of play. Computer games are, after all, digital media that have won a large audience share. Therefore instructors, academic technologists, librarians, and other staff could learn from this success by playing these games and by reflecting on the experience. We could do worse than work through several games' tutorials, which embody a whole series of classic pedagogical principles: repetition, scaffolding, multimedia reinforcement, assessment, taking learners to the edge of their zone of proximal development, and increasing challenges over time. We could learn from how players find, share, and evaluate information within and between games, especially in social situations. An ethnography of play might be a tutorial for instructional design. Indeed, when have teachers last had such a fruitful field from which to learn?

Intersections

To recap: games can serve as learning objects, from which both students and educational staff can learn (and, increasingly, *are* learning). And gaming is a rich world, intersecting with campuses at multiple levels.

If the pedagogical uses outlined above merit increasing those intersections, practical considerations involve several components. First is literacy: how we learn about gaming, the gaming-learning connection, and learning from games. The breadth, complexity, and dynamic development of gaming suggest that collaborative knowledge-sharing is the best approach. Already, members of a campus community hold pieces of the puzzle, from personal experience, professional presentations, classroom practice, and reading in the literature.

The second component is libraries, which play a key role in this process of learning. Some libraries have hosted game nights or have developed a digital game collection for access and preserva-

tion purposes. Libraries continue to lead the information literacy movement and are well equipped to teach academia how best to learn about games, as well as how best to sift information from within games.

A third component is campus IT support. The technological demands of games can represent a support challenge, depending on the nature of a game. Casual browser games, for example, can be played simply by interacting with rich media content in a lab machine's browser. Games that must be installed on a hard drive, in contrast, lead to the familiar world of deciding which labs support which applications and reminding users with desktop access about the risks involved in misusing such access. Finally, social games demand some measure of campus network bandwidth. At the low end this can be negligible. But as the demands of a game escalate, as with the full-media mass streaming of Second Life, network management must be considered. As with so many other digital media, the strategic decision on gaming support involves balancing IT resources with pedagogical or other benefits; as noted earlier, sharing information about gaming is the best way to make well-informed decisions.

Computer games can indeed be learning objects, digital content that can help not only with teaching but also with study. The size and complexity of gaming can be daunting, but in 2008, games for education offer many new opportunities as pedagogical devices.

Notes

1. I owe this slightly twisted term to Scot Osterweil, who suggested the name *Grand Theft Calculus* in his presentation to the NERCOMP workshop "Learning from Video Games: Designing Digital Curricula," October 1, 2007.
2. Indeed, consider the use of pre-digital games to teach. Chess has long been seen as a state- and warcraft learning tool, with Kriegspiel being the first in a long series of modern wargames designed to teach fighting through simulation.
3. John C. Beck and Mitchell Wade, *Got Game: How the Gamer Generation Is Reshaping Business Forever* (Boston: Harvard Business School Press, 2004).

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