

# MIND GAMES

ONCE RELEGATED TO THE "CULTURAL  
WASTELAND," VIDEO GAMES MAKE IT TO  
THE NEXT LEVEL—ACADEMIA  
BY KEN STIER

Last year, when former Supreme Court Justice Sandra Day O'Connor spoke at the fifth-annual Games for Change conference in New York City, she acknowledged that she was an unlikely keynote. If anyone had suggested at her retirement a few years prior that she would soon address a digital games conference, she told her audience at Parsons the New School for Design, "I would have been very skeptical, maybe thinking you had one drink too many." But in spending more time with her family, she noticed that her grandchildren play video games with surprising intensity. They were learning, she realized, and having fun, too.

**O**'Connor has applied this insight to one of her own passions: teaching about our country's ongoing constitutional debate. The result is an interactive game-based civics curriculum ([www.ourcourts.org](http://www.ourcourts.org)) for seventh-, eighth-, and ninth-grade students, which puts players smack in the middle of animated legal dramas. In one of two games released in August, students assume the coveted position of law clerk to a Supreme Court Justice, whom they assist on pressing issues of free speech: Should school administrators, for instance, be able to censor students' newspapers or the T-shirts they wear? "The better educated our citizens are, the better equipped they will be to preserve the system of government we have," O'Connor avows. "But knowledge about our government is not handed down through the gene pool—every generation has to learn it, [and...] we learn by doing."

By that logic, if you want kids to understand ecology, have them play *WolfQuest*, a National Science Foundation project in which they become a wolf living in Yellowstone National Park. For a unit in world history, tap into one of 18 chapters of *Civilization*, where students inhabit a famous leader—from Otto von Bismarck to Mahatma Gandhi.

This notion, that we learn by doing, is central to what makes games such a potentially protean force in education. "When today's learning scientists talk about the mind, it sometimes seems as if they are talking about video games," notes James Paul Gee, a professor at Arizona State University and a leading advocate for gaming. Not long ago, our brains were commonly compared to a digital computer; humans thought and learned by manipulating abstract symbols via logical rules. Newer research, however, suggests that people primarily think and learn according to experience. "Good games

don't just tell you things," Gee says. "Good games have you *do* things."

Studying good games—and then designing even better ones—is the mission of the new Games for Learning Institute, or G4LI, a first-of-its-kind, multidisciplinary, multi-institutional research alliance housed at NYU, which draws on collaborators from Columbia University, the City University of New York, Dartmouth College, Parsons the New School for Design, Polytechnic Institute of NYU, the Rochester Institute of Technology, and Teachers College. The aim is to create a premier center for games research, and then implant this technol-

**"Like gaming, the novel was not taken seriously at first. Only women wrote and read them."**

**- DESIGNER KATHERINE ISBISTER**

gy throughout the nation's school systems. This effort is complemented by the formation of NYU's new Game Center, which will train the next generation of designers, developers, entrepreneurs, and critics—and advance the art, science, and culture of gaming. A university-wide enterprise for both undergraduates and graduates, the center will draw on faculty from computer science, education, engineering, new media theory, and the arts under a new degree program. The first undergraduate classes started this past September, with graduate-level courses slated to follow in the next few years.

Together, the G4LI and the Game Center should establish a solid NYU role for games that may come to rival its stature in the film world. That has not stopped a nagging sense in some quarters that the place of games at a university still needs justification. "It often happens at the beginning of new cultural forms that eventually have a huge impact on people," observes Katherine Isbister, a game designer and researcher at Polytechnic Institute, which has long been a pioneer in the study of gaming and recently became affiliated with NYU. "At one point, the novel was not taken seriously, only women wrote and read [them]." In a recent interview with *Wired* magazine, filmmaker Guillermo del Toro, who wrote and directed *Pan's Labyrinth* (2006), predicted that gaming was on the verge of a high-minded breakthrough. "In the next 10 years," he said, "there will be an earthshaking *Citizen Kane* of games."



With more than 100 million copies worldwide, *The Sims* is the best-selling PC game series of all time. Users "play house" in a simulated world where, in the latest version, they can choose among 60 personality traits, including a hopeless romantic and a devious kleptomaniac.

PHOTOS COURTESY OF ELECTRONIC ARTS

## "Where do you turn if your kid is having trouble with math but spends hours a day playing *World of Warcraft*?"

—MICROSOFT RESEARCH'S JOHN NORDLINGER

One way to measure games' legitimacy today is in their sheer reach. Already 97 percent of American kids play computer and video games. There are approximately 100 million Nintendo DS handheld game machines and 50 million Nintendo Wii consoles in use. Many more players just use their computers; casual online gaming sites counted some 86 million visits in 2008. It's a \$30 billion industry—which grew more than 20 percent in 2008, despite the economic meltdown.

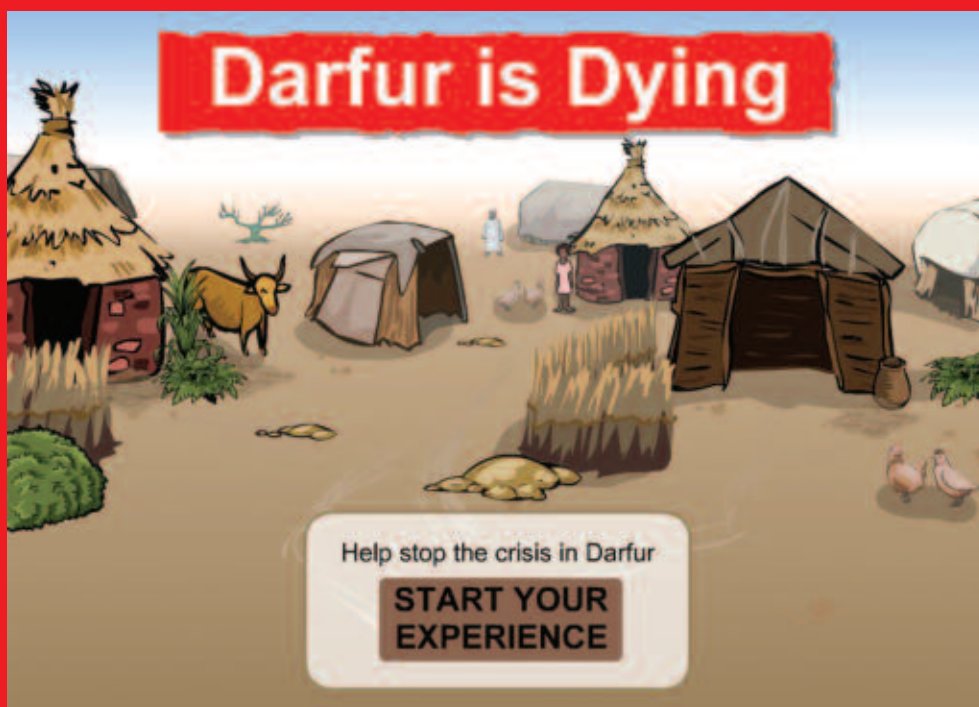
That industry has been slowly building since rocket ships dueling in *Spacewar!*, a two-dimensional arcade game spawned at MIT in

1958 as the true pioneer.) A long line of *Pac-Man*-like games followed, but it wasn't until *Adventure* (1976) that narrative appeared, with coding that allowed players to instruct their characters. This was the first example of what some call a progression game and became the prototype for many of the most popular titles of today, including *Halo* and *Grand Theft Auto*, where players work their way up criminal organizations and whose vivid graphics are fast approaching film's verisimilitude.

The top sellers in recent years have been sports games, such as *Madden NFL*, where players become managers and build their

own dream teams, and a series of *Star Wars* adventures. Another popular title, *World of Warcraft*, is a rich online battleground that pits the "colossal, metallic-skinned" Titans against the "malefic, demonic beings" of the Twisting Nether in a universal struggle that famed mythologist Joseph Campbell might have approved of. And then there is *The Sims*, the best-selling PC game series ever (*The Sims 3* was released in June). A simulated life game, it takes place in the suburbs of SimCity and has been described as a virtual-world version of that classic children's game "playing house." Players control virtually all aspects of managing a family, including the mundane rituals of sleeping, eating, and bathing. Little wonder that *SimCity 2000* is being used to study urban planning or that *Second Life*, another wildly popular virtual world, has been co-opted by hundreds of universities as a novel, low-cost teaching platform.

The fact is that games are already revolutionizing how both young people and adults learn, in and out of the classroom. Sophisticated simulations, a core component of games, are standard training for a wide range of professionals, from pilots to surgeons. The Swedish National De-



PHOTOS COURTESY OF MTVU





fense College uses a game to teach United Nations peacekeepers to pacify agitated civilians with a minimum of force, and the U.S. military is now instructing troops about tribal differences in Afghanistan through virtual-world simulations before they are deployed to the field. These practices are only bound to become more commonplace as younger generations that have grown up immersed in digital media assume the real-life roles of educators.

To play a game, one must understand its mechanics and rules. These are often revealed gradually, requiring players to engage in a mini-version of the scientific method, poking around, experimenting to see what works. This is part of the reason why game design has become a popular pedagogical tool. Completing games can take dozens, if not hundreds, of hours, requiring persistent trial and error, and problem-solving. Research has also shown that playing can improve one's ability to process visual information and manipulate spatial information, and some contend that gamers' IQ levels actually increase as well. Another virtue is that players control the speed of their learning and may quickly recover from momentary stumbles—a far more felicitous arrangement than having to stew about a poor test score. "Games are all about graceful failures," says Ken Perlin, a longtime gamer and co-director of G4LI. That's

Since premiering in 1989, *Madden NFL* has exploded in popularity and functionality—the 10th installment of the game features weekly blog updates, message boards, live drafts, trades, and new animation that portrays starting

quarterbacks with their real-life snap stance and throwing motion. The game even offers a "Madden IQ" evaluation, in which a player's skills are gauged and the level of difficulty is then set accordingly.



PHOTOS COURTESY OF EA SPORTS



vital for maintaining motivation and confidence, traits that make people better learners.

The way Perlin sees it, games stimulate a range of brain activities—problem-solving, social interaction, and cognition—which he likens to "learning food groups." Ideally, says Perlin, a computer scientist at the Courant Institute of Mathematical Sciences, "You want all [the food groups] to be present at the same time for maximum learning, which is not the case in traditional education, in which you are fed one at a time"—as in, for instance, listening to a lecture. "For me, games are actually an opportunity

to [explore] what is the best way to feed the brain."

That assignment—how to feed the brain—falls to Jan L. Plass, an educational assessment expert and associate professor at the Steinhardt School of Culture, Education, and Human Development. As G4LI's other co-director, he will lead a team studying a variety of commercial and educational games to discern what patterns make some games more effective for specific audiences. "The whole point is to have something that game designers can rely on, so that they don't have to constantly reinvent everything," Plass explains.

G4LI's initial focus will be on computer



*Darfur Is Dying*, one of many new "Games for Change," has proved a less evangelical way to teach values. Players inhabit a character from a Darfurian family and live in a refugee camp, from which they must fetch water or wood for cooking—all while avoiding capture by Janjaweed gunmen. With the help of mtvU, the music channel's school outreach arm, the game is stoking letter-writing campaigns and disinvestment initiatives.

games for teaching middle-school students in science, technology, engineering, and mathematics—the “STEM” subjects. This age is considered the most fragile along the educational chain, where achievement can drop precipitously as distracted pubescents turn off and, perhaps eventually, drop out. G4LI will work with a range of students at 19 New York City public schools, from the Lower East Side to the Bronx, with special focus on groups, such as girls and minorities, who tend to score lower in STEM subjects. “Right now, where do you turn if your kid is having trouble with math but spends hours a day playing *World of Warcraft*? There is nowhere,” notes John Nordlinger, who manages gaming inquiries at Microsoft Research, which is providing half of G4LI’s initial three years of funding—roughly \$500,000 a year.

The trick with educational games seems to be embedding important skills into a game that kids find fun—a kind of cerebral sugar-

**The trick with educational games is to embed important skills into a game that kids find fun—a kind of cerebral sugarcoating.**

coating. To play, and especially to play well, they must master those skills. That’s how *DimensionM*, an immersive 3-D video game

world works. It follows Darienne Clay, a University of Hawaii biotech student who is shipwrecked on an island, and teaches pre-algebra and algebra by setting up a series of adventure missions that students, playing individually or in a fast-paced multi-player format, want to join—but can do so only by using math. When classes, or schools, compete against one another in the multi-player format, the excitement can rival sporting contests.

Games may also be the least evangelical way of passing on values. This is the starting point for so-called “Games for Change,” which require that players contend with the most pressing world problems, from the spread of HIV/AIDS to the genocide in Darfur. One of the more explicit forays in this direction is *Quest Atlantis*, a 3-D multi-user game where more than 10,000 students between the ages of 9 and 15 on five continents engage in a range of “quests” that promote values such as environmental stewardship. For example, an aquatic park with polluted fish habitats prompts students to become field investigators, where they gather information from virtual characters—and real-life mentors associated with the game—before proposing solutions.

Another sophisticated example of this

genre is *PeaceMaker*, which grew out of a student project at Carnegie Mellon University in Pittsburgh. Players take on the role of Israeli or Palestinian leader to find a peaceful two-state

solution in the midst of multiple political minefields. The game is being widely played in Israel and Palestine—the Peres Center for Peace distributed 80,000 copies as an insert in local Arabic, Hebrew, and English newspapers. Erik Nilsen, a psychology professor at Lewis and Clark College in Portland, Oregon, found that after six hours of play, a student’s “preexisting negative perceptions of Palestinians” were “significantly reduced,” while views of Hamas and Israeli settlers tended to worsen.

By most measures, these are the winning efforts. But there are far more losers—well-meaning games

that just don’t resonate with the playing public. So while it’s nice to imagine a future where school teachers use gaming to accompany lessons on World War I or advanced algebra, innovators will be charged with making them accessible and inspiring. After all, what good is a game that nobody wants to play? As Perlin says: “Making a game is easy, but it is a little harder to make a game that is fun, and it is quite difficult to make a game that is fun and that is demonstrably teaching.” ■



*World of Warcraft* is an online fantasy that pits the Titans against demons of the Twisting Nether. With 11.5 million monthly subscribers, it is among the most popular multi-player games.

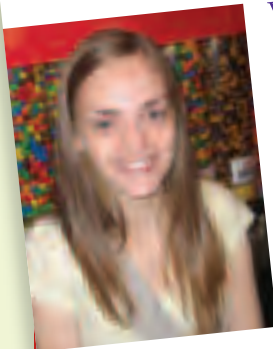
PHOTOS COURTESY OF BLIZZARD ENTERTAINMENT



# NYU Students **Need Your Help**

Dear NYU Alumni and Friends:

I'm a junior at NYU. Until recently, **I was uncertain if I could afford to return this fall.** Fortunately, NYU was able to come to my rescue with emergency aid, and I'm so grateful. The emergency aid I received was made possible in part by gifts from alumni and friends like you.



When the economic downturn forced my dad into an early retirement, he could no longer supplement my education costs. My mother is blind and disabled, and I do everything I can to help her. While I have a student job and several loans, I still could not completely cover my tuition. **Thankfully, the emergency aid I received has allowed me to continue pursuing my education.**

Your willingness to help students like me during this time of great need is deeply appreciated. Many of you understand the difficulties that students like me face, and I am indebted to your compassion.

**I'm not the only one who needs help.** Many NYU students will require assistance to complete their degrees, and your generosity will be felt for a lifetime.

Sincerely,

*Katie Ellis*

Steinhardt '11



**PLEASE MAKE  
A GIFT TODAY**

Online: [www.nyu.edu/giving](http://www.nyu.edu/giving)

Phone: **1-800-NYU-4144**

Your gifts make it possible for students like Katie to pursue the kind of top-notch education only found at NYU. She, and the **70%** of NYU students who receive financial aid, are enormously thankful for the generosity of donors to The Fund for NYU.

