



# Are Multiplayer Games the Future of Education?

By *Melanie Plenda*

It was just supposed to be a quick trip to Beijing, a touristy group thing to take in the sights. It wasn't supposed to go down like this. There wasn't supposed to be a lost manuscript; the travelers weren't supposed to turn on each other. The only good, if any, to be found in this godforsaken quest, this unholy mission, was that by the end of it, they would all know how to speak Mandarin.

This intricate *Maltese Falcon*-like story will unfold each day, over the course of semester, as a multiplayer game at Rensselaer Polytechnic Institute in New York. It is being designed as a language-learning exercise by Lee Sheldon, an associate professor in the college's Games and Simulations Arts and Sciences Program. "Using games and storytelling to teach—it's not that radical of a concept," says Sheldon. "It makes them more interested in what's going on."

Sheldon is a pioneer in gamification, a new movement that essentially takes all the things that make video games engaging and applies them to classroom learning. Sheldon started developing the theory eight years ago. Since then, gamification now comes in all shapes and sizes and is used across educational levels, for kindergarteners through adult learners. Its practitioners range from individual teachers experimenting with game-like elements in their classrooms to entire schools that have integrated the games into their curricula.

"The goal is to change the student's mindset to a mastery orientation—to promote motivation, engagement, active learning—and to cultivate 21st century skills like collaboration, problem solving, creativity and systems thinking," says Joey Lee, a research assistant professor of Technology and Education at Teacher's College, Columbia University. "Learning looks very different today, so we need to move away from the Industrial Revolution one-size-fits-all model that still plagues much of education."

Sheldon discovered gamification by accident. After spending decades writing and producing television shows in Hollywood—and, more recently designing video games—Sheldon transitioned into academia, teaching game design to RPI students. Not being a teacher by training, he says, he ran his class in traditional fashion: one person lecturing, everyone else listening, the typical drill.

"I got bored very quickly with myself," he says. "If I was getting bored, you can imagine how the

students were feeling. I thought, 'Well, you dummy, you're a game designer. Why don't you make the entire class into a game?' So I did that and things went really well."

Everything started turning around. Students stopped cutting class to the point where there was near-perfect attendance, and the average grade went from a C to a B.

Based on his own success, Sheldon went on to write the book *The Multiplayer Classroom: Designing Coursework as a Game*. After that, the concept started taking off, as teachers in the U.S. and around the world expanded on the idea and added little bits of their own creativity here and there.

The reason it works, Lee explains, is that games themselves actively engage players cognitively, emotionally, and socially to keep them motivated to play. In their paper *Gamification in Education: What, How, Why Bother?*, Lee and his coauthor, Jessica Hammer, point out that games offer a rich and complex environment that demands experimentation, problem-solving and quick thinking. The rules are set and known, the tasks are clear, the rewards are immediate, and the action intensifies as a player gains skill. Even failure is attractive in the game universe, since players know if they keep trying, they will eventually master the skill or beat the level.

Furthermore, stories are emotionally compelling; they take a player from curiosity to frustration to optimism to pride to joy. Games offer students a chance to try out new roles and look at situations from points of view that are outside of their own. Through the games, they can see themselves in new ways: The nerd becomes a powerful orc who can slay the dragon and get the girl; the jock turns into a wizard at strategy known more for his brain than his cool. All of this is all socially acceptable, since it's in the context of a game.

This is why gaming aficionados can sit playing for hours on end. Applying those principles to the classroom has the same effect, says Larry Graykin, a language arts teacher at Barrington Middle School in New Hampshire. "The key benefit in my opinion is that it provides context for work that might not otherwise have a clear context," says Graykin, who gamified his classroom two years ago. "We can say, 'You need this for high school,' and that works for a certain population of kids. But for a lot of kids, they don't see that far into their future."

Another benefit is the shift in emphasis from getting a grade to learning the material. In most gamified classrooms, students work for experience points (known as XP) instead of grades on tests or exercises. Rather than being penalized for what they don't know, students are rewarded for continuing to try until they learn the material.

"That's one of the things that I think is most critical in terms of this being a sort of paradigm shift," Graykin says. "In the traditional classroom, an unfortunate side effect of averaged grades is if a student does very poorly on one big test, or something like that, that's it. I've actually heard in teacher room conversations, 'Oh, well, there's no way he could possibly pass now.' And this eliminates that. They can rally at the last minute—and they do. "

Typically, every student in a gamified classroom starts out with zero XP, accumulating quests and accomplishments that translate into a letter grade by the end of the class. "They are participating,

they are engaged," Sheldon says. "If for example, somebody doesn't do well on an exam, they can take the exam again. I'm trying to teach them, I'm not trying to trick them."

The result is that students feel that they are in control, with the teacher merely serving as a game master. They challenge themselves and collaborate with one another—and develop healthy competition when necessary—because they see the benefit to their own progress in the game. "The goal," says Lee, "is to make learning more about intrinsic motivation—to leverage a learner's desire to explore, be curious, gain mastery, and so on. If a learner can gain experience points and level up as they gain knowledge, perhaps we can cultivate life-deep, life-wide, and lifelong learners."

The practice is not perfect, and not the right fit for every instructor. "Some teachers may not feel sufficiently equipped to try designing a game layer for their classroom," Lee says. "It takes some creativity, patience, and sometimes extra work to do gamification the first time. It's much easier to not take a risk and to do education the safe, traditional way."

And some students just aren't that into it either. Juho Hamari and Jonna Koivisto of the University of Tampere in Finland have studied gamification extensively, and they've found that some students simply dislike competition. "Similarly," Hamari notes, "all students might not appreciate narratives and, for example, role-playing type of interactions."

Another problem is that a classroom environment can suck all the fun out of the game experience. "School is already a game with points, levels and badges," says Lee. If a game feels like more of the same, he adds, "it's not a very good game because it often fosters anxiety and poor learning. It's hard to design good gamification systems."

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Gamification also gets a little bit of pushback for its sometimes heavy-handed use of extrinsic rewards to make course material palatable to students, says Hamari. Even Sheldon gets a little miffed about the way some teachers have been using badges—actual physical rewards—with wild abandon. He prefers to let the students motivate themselves and each other.

As an example, Sheldon describes his midterm exams. At the beginning of each semester, his class is divided into five guilds, which do projects and go on quests together. The 40-question midterm however, is a solo effort, except for the last 10 questions.

"If any one member of the guild gets those questions correct, they all get credit for it," Sheldon says. "And I was afraid that would make people lazy, or it would tip people into a better grade than they deserve, but it doesn't. What happens is the students want to do it for the other people in their guild. And when they do, they get congratulated for it. They get a pat on the back, they get a high five—that is the intrinsic reward. It's far more powerful to have somebody hug you because you got everybody something. So they all try to do it."

Once students enter the real world, bosses are generally short on hugs. So how well does a gamified classroom actually prepare students for life after graduation?

"I think they feel better about themselves," Sheldon says. "They are more focused, they learn how to do the job for themselves, they know they are doing something which is worthwhile. I don't think being able to do well on a multiple choice exam—something I've never done—is preparing them."

In game-based classes, he says, "You are all working together and you learn teamwork. You learn what skills you have and how you can rise to the occasion. I think those are all intrinsic rewards—and I think that's what prepares them."

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