



educational gaming

Online role-playing games, which take players on explorations of medieval fantasy worlds, are showing the potential to be a powerful tool for ESL learning.

ON A QUEST FOR ENGLISH

by John K. Waters

When Professor Edd Schneider and game designer Kai Zheng suggested to attendees gathered in San Francisco last spring for the annual Game Developers Conference that massively multiplayer online role-playing games, better known as MMORPGs, could help Asian teens acquire English language skills, the two men generated considerable buzz. Their message threw a spotlight on a relatively new area of investigation in the evolving relationship between education and computer games—namely, whether an MMORPG might serve as a pedagogical tool for students learning English as a second language.

Schneider, an associate professor in the Department of Information & Communication Technology at The State University of New York (SUNY) at Potsdam, has been researching games and teaching game design and development for more than 10 years. Zheng, a student in the department, is a Chinese software developer who has written for video-game magazines in China.

In their presentation, Schneider and

Zheng argued that the internationally popular MMORPG World of Warcraft (WoW) could be marketed more effectively in China, Korea, and Japan if it were run on English-as-a-second-language servers, which are accessible to players in Asia and the United States. Blizzard Entertainment, the maker of WoW, currently sells the Asian rights to the game to a Chinese company, which runs it on separate servers. Schneider believes that running the game on joint ESL servers could remove one of the greatest roadblocks to sales in that part of the world: parents.

"In China, parents hate computer games," Schneider says. "They want their kids to be studying or involved in sports. Most wouldn't even consider buying World of Warcraft. But Asian parents also want their kids to speak English. We suggested that if they knew their kids would be getting up at 7 a.m.—which is 7 p.m. here—to practice English [the game's default language], they would have less antipathy for the product. I really believe that if Blizzard started an ESL server of English in China, they would make a fortune."

Illustration by Ryan Durney

educational gaming

Beyond marketing considerations, Schneider believes that MMORPGs have great potential as tools for ESL programs in US schools. It's a notion born of a project Schneider and Zheng worked on earlier this year, in which a group of SUNY Potsdam graduate students tutored a group of Chinese middle schoolers in English through online computers games. Employing a VoIP connection and Flagship Industries' group-communications program Ventrilo, the graduate students rose at 3 a.m. to interact with students at Shanghai's **Qibao Middle School**. Over the course of five months, Schneider's students played a range of games with the

Qibao students, everything from online Scrabble to various strategy games.

"Basically, I told [my students] that they could teach them English using any game they wanted," Schneider says. "Once a week, all my students would get up in the middle of the night, put on their headsets, and chat for two hours with 12-year-olds in Shanghai. The Chinese kids absolutely loved it. Their teachers told us it was their favorite class."

Scrabble turned out to be the best vocabulary builder of the project, Schneider says, but WoW presented a social environment in which language learning was more contextual, similar to the experience of total immersion in a foreign culture. The game provides a persistent world in which players maneuver their avatars to explore the world, fight monsters, and interact with so-called non-player characters that are part of the game. Those avatars also interact with other players' avatars, and even work in groups to pursue quests—and that requires conversation, which is done through chat windows in which players can type messages to other players within a local area, to members of their party, to members of their guild, or directly to individuals.

"For 20 years, we've been talking about how we will soon be able to put you and a person from China together in the same virtual space to talk and interact," Schneider says. "Well, we can do that right now with MMORPGs."

Schneider believes the Chinese students learned far more conversational English in WoW than they ever would have learned by using a textbook. "You can teach *left* and *right* in a classroom setting, but in World of Warcraft, they get a chance to use it," he says. "They went from being afraid to say anything to telling my students, 'This time, I'm going to kick your butt!'" Schneider also observed that the Chinese students were

highly motivated to acquire English because it helped to advance them in the game. "Nothing is more motivating than these online games," he says.

Schneider and Zheng are hoping to continue their study of the language-learning potential of World of Warcraft next year with a summer gaming camp. Participating American kids would log on in the evening, Chinese kids in the morning. "The idea behind the camp is to teach English to the Chinese kids," Schneider says, "but also to help both groups of players learn to balance gaming with the rest of their lives."

"The best way to learn a language is through immersion. The only way you can provide an immersive experience that scales is in a virtual world." —John Nordlinger, Microsoft Research

Active Learners

Schneider and Zheng weren't the first to explore the language-learning possibilities of an MMORPG. In the spring of 2006, Bruce Gooch, then a professor at Northwestern University, and graduate students Yolanda Rankin and Rachel Gold put together a pilot study to evaluate second language acquisition in the context of gaming. "I championed the idea at Northwestern of using MMORPGs to learn a second language," Gooch says, "but Yolanda cleverly used it for ESL in the study."

In their proposal for the study, the Northwestern researchers wrote: "Since MMORPGs support social interaction between players, MMORPGs serve as the catalyst for fostering students' language proficiency as students interact in a foreign language while playing the game. For these reasons, we believe that MMORPGs embody an interesting and underutilized learning environment for second language acquisition."

The game they selected to use for this study was Sony Online Entertainment's EverQuest II (EQ2), a sequel to the enormously popular EverQuest. Though not as commercially successful as WoW, EQ2 offered key advantages, Rankin explains.

"We thought it would be a better game for language learning than WoW, because everything in the game is labeled, so you have an opportunity to get visual reinforcement of information," she says. "You see a noun and you get a label: This is a bird, this is a fortress. Also, the game's quests are documented and displayed on the screen. As students complete these quests, they develop an appreciation for verbs, adverbs, and colloquial meanings. EverQuest just has a lot more text all over the place."

The eight-week pilot study involved six English language learners (ELLs)—four men and two women—who were either Northwestern graduate students or spouses of Northwestern grad students. Two of the subjects were native speakers of Korean, two spoke Chinese, and two Castilian. They all played EQ2 for at least four hours per week.

Rankin, a PhD candidate in Northwestern's Department of Electrical Engineering and Computer Science, emphasizes that

BYTE SIZE

Find reviews of World of Warcraft and EverQuest II, respectively, at www.gamespot.com/video/534914/6114096/world-of-warcraft-video-review and www.gamespot.com/video/561210/6113523/everquest-ii-video-review.

educational gaming

FANTASY ISLAND

RESEARCHERS ARE DEVELOPING A RESORT WITHIN THE 'SECOND LIFE' DIGITAL WORLD TO USE AS A STAGE FOR LANGUAGE STUDIES.



Life is a vast digital continent, teeming with avatars (nearly 10 million by one count) representing "residents" with homes and businesses.

Researchers at nonprofit research institute SRI International (www.sri.com) see Second Life as an environment with great promise for English language learners. SRI's Center for Technology in Learning (CTL; www.ctl.sri.com) has just embarked on a research project called Lakamaka Island, named for a piece of real estate—a tropical island—that the institute has purchased in the Second Life universe. Principal investigators Valerie Crawford and Phil Vahey and their team are using this virtual island as a staging ground for language-learning studies.

Also on the project is John Brecht, a learning technology engineer. "We're looking at the virtual environment as a means of establishing a concrete context to practice language skills," he says. "Rather than running students through exercises in the abstract, practicing words and phrases from a textbook, the virtual world allows you to engage students in a virtual role-playing exercise."

Initially, CTL researchers plan to establish a narrative thread for visitors to the island, woven around the concept of travel, Brecht explains. Participants will check in to hotels, order meals, and engage in many of the activities they might experience during a trip to another country. SRI is also developing a voice-recognition engine designed to allow participants to practice their language skills, without having to have an expensive instructor or native speaker in the room.

The long-term goal of the project, which is still in the prototyping phase, is to create a kind of mutually supportive foreign exchange program, Brecht adds. "The island could be a place where you could have English speakers learning Japanese, and Japanese speakers learning English, with both helping each other through the exercises. Think of it as a bottom-up, self-motivated social system, rather than a traditional top-down, school-like experience."

It may not provide participants with the same quest-oriented challenges of a World of Warcraft or an EverQuest II, but the burgeoning 3-D virtual world known as Second Life (www.secondlife.com) is all about immersion. Second

the study was "highly preliminary." But the results do suggest that EverQuest, and possibly MMORPGs in general, reinforce language acquisition for a number of reasons. The pursuit of quests, for example, requires players to become what Rankin calls "active learners" who engage with other players and the gaming environment. The study also supports Schneider and Zheng's conclusion that the games are inherently motivating.

"The game requires them to do things," Rankin says, "to read directions, to interact with other avatars, to travel over the landscape; that's why they learn the language. You have to comprehend the information that's in front of you in order to advance to different levels and complete the quests. And you can't complete the quests without asking for help from other players, which, again, requires you to understand the language." EverQuest II provides several chat channels, allowing players to type messages to each other, ask questions, and meet for joint quests.

Gooch, who is currently an assistant professor of computer science at the University of Victoria in British Columbia, cites another factor: "We know that learning is accelerated if we have an emotional response to the learning. We believe that's what might be going on in the game. I want to defeat an opponent. I'm worried, I'm scared, I'm excited—I'm interested. You tend to remember things that strike you this way."

Perhaps the most important difference between EQ2 and WoW as tools for ELLs is EverQuest's use of audio. The initial release of the game had 130 hours (70,000 lines) of spoken dialogue provided by 1,700 voice actors. Such an audio-rich environment makes for a more immersive experience, Gooch says.

This rich audio component had a beneficial effect on pronunciation in the Northwestern study. Rankin is also convinced that it was responsible for accelerating improvements in comprehension and vocabulary acquisition as the players moved through the game. As they advanced to level 10 and higher, their vocabulary test scores improved significantly. "At that level, just about every avatar you meet has audio associated with the text," she says. "When you're a newbie, only a few key avatars have speech associated with their text. The students told us in the post-interview that hearing the words spoken was enormously helpful."

Role-playing games, however, do appear to have their shortcomings. As good as EverQuest II may be at helping players to build vocabulary, it proved much less effective at conveying the grammatical aspects of language. "It just seems to get lost," says Rankin. "They're understanding meaning, but they're not worried about subject-verb agreement."

And MMORPGs are not best suited for absolute beginners. The researchers concluded in their report on the study: "We realize that if the ESL student is to benefit from the immersive environment represented in role-playing games, the participant should possess a minimum of intermediate-level knowledge of the English language."

Rankin plans on continuing her exploration of the potential of role-playing games in language acquisition in a follow-up study at the University of Mississippi. This time around, she intends to increase the subject pool, prohibit paired play (most

educational gaming

of the players in the first study played in twos), and provide a support “scaffolding” that includes a digital dictionary.

“We observed that the students were looking up a lot of phrases in books they brought or translation computers,” Gooch explains. “They spent a lot of time asking each other and the tutor what somebody meant: ‘I know what this word means, and I know what that word means; what do they mean

Virtual Immersion

The Northwestern MMORPG study was first suggested to Gooch by John Nordlinger, program manager for the Microsoft Research group. Nordlinger focuses on using gaming themes and technologies to enhance curriculum. He is currently talking with academics about collaborating on a game to help young kids with algebra and geometry.

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—Edd Schneider, The State University of New York at Potsdam

in this phrase?’ Ideally, we’d like to make everything clickable. You say something to me that I don’t understand, and I should be able to click on the text on the screen to get definitions of the words or explanations of the phrase—kind of an instant translation.”

Meanwhile, Gooch says he is set to start a new project to investigate the potential of MMORPGs as environments for teaching algebra and geometry. He’s also in the midst of testing out role-playing games on English language learners at the high school level. He fully expects that the results from the middle school studies will carry over. “It was a longer process to get permission to work with a high school, or we would have started there with our pilot study,” he says. “We have since obtained permission from two high schools, and we now have studies ongoing there.” Gooch says preliminary results from these studies are similar to the outcomes obtained in the first study.

One of the best things about these kinds of virtual worlds for English language learners, he says, is they provide them with a safe environment in which to make mistakes. “You aren’t your avatar,” he says. “You can use that avatar to make mistakes in a game without losing face. And that’s a very good thing.” (Rankin found in her post-study interviews that this aspect of the EQ2 experience was especially important to her Asian subjects.)

In response to the notion that WoW and EQ2 are likely to salt players’ vocabularies with odd terms not found in most classroom language texts (sword, elf, wizard), Nordlinger observes that many students in American English classes are now reading the Harry Potter novels, which operate from a similarly exotic lexicon. “Yes, there are skeletons and vampires in EverQuest, but don’t think they’re not already in English class,” he says.

Whatever their shortcomings, games like WoW and EQ2 provide ELLs with a uniquely scalable immersive experience, which Nordlinger believes is essential in the language-learning process. “The best way to learn a language is through immersion,” he says. “The only way you can provide an immersive experience that scales is in a virtual world of the sorts created by Sony Online and Blizzard.”

In Nordlinger’s view, though, the current crop of MMORPGs is unlikely to find its way directly into the ESL classroom. He sees them rather as curriculum-enhancing technologies. “I think they’re going to work best as extracurricular solutions,” he says. “Someday someone is really going to get this. They’re going to integrate [gaming] into their classroom, and they’re going to find that kids learn geometrically more when their extracurricular activities are complementing the classroom.”

And what about the dangers of kids’ overdosing on role-playing games? “Many people say to me, ‘What do I do about my son who’s playing World of Warcraft all the time?’ I say, ‘Tell him he can play as much as he wants, but he has to play it in a different language.’” **THE**

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Blizzard Entertainment
www.blizzard.com

EverQuest II
www.everquest2.station.sony.com

Microsoft Research
www.research.microsoft.com

Sony Online Entertainment
www.station.sony.com

Ventrilo
www.ventrilo.com

World of Warcraft
www.worldofwarcraft.com