# Speech in a Virtual World

## Disabled users gain control of their in-world life

In real life there are catastrophic injuries and wheelchairs. In Second Life there are horseback rides and dancing till dawn. In real life there is dependence and isolation. In Second Life you can fly.

Virtual worlds like Second Life and Who.com offer real-life health benefits for people who use them. Research has shown that participating in virtual worlds improves spatial awareness, hand/eye coordination, and fine motor skills. People with autism spectrum disorders can learn social skills in a safe environment. And using virtual worlds can improve cognitive function and concentration in those with traumatic brain injury.

An estimated 50 million to nearly 200 million people use virtual worlds like Second Life (the range can be attributed to an overlap of users among sites and a differentiation between registered and active users). We don't have hard numbers regarding how many users have disabilities, but statistics on video gaming offer insight. As many as 20 percent of the estimated 300 million to 400 million video gamers are disabled, a 2008 survey by PopCap revealed. Considering that roughly 15 percent of the U.S. population is disabled, people with disabilities are overrepresented in the gaming market. Those surveyed reported more significant benefits from playing video games than their nondisabled counterparts.

### Virtually Empowered

In-world, too, the potential for empowering people with disabilities is demonstrated time and again. Alice Krueger is an active resident of Second Life because there she found the community for which she was looking. Krueger, founder of Virtual Ability, which provides resources to help people with real-world disabilities get acclimated in Second Life, has multiple sclerosis and can go weeks at a time without socializing in real life.

Krueger is not alone. People with disabilities are often isolated, but participating in-world allows them to be free of situations they cannot control in real life. A resident might be in a real-world wheelchair, but online her avatar walks with ease. She can participate in activities that are not accessible in real life, communicate with people from around the world with real-time chat, and choose whether to tell people about her personal situation.

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"[A virtual world] doesn't replace the real thing," says John Lester, Boston operations director of Linden Labs, the creator of Second Life. "But when you don't have the real thing, getting closer is valuable."

Speech recognition facilitates interaction among users in Second Life, but people with disabilities still face challenges. Many residents use desktop dictation, such as Nuance Communications' Dragon NaturallySpeaking, to navigate and chat in-world. But because Second Life does not use standard Windows application programming interfaces, not everything works by voice. For example, Dragon's Select-and-Say feature is not available in the chat window, and menu items do not have assigned shortcut keys, so users cannot write keyboard shortcuts to voice-enable the environment.

Dictators can write scripts to control the mouse or memorize MouseGrid coordinates to control the features they use most often, but when the graphic user interface changes, the customization becomes worthless. If they don't give up, then users have to re-create commands to correspond to the new interface.

Linden Labs is now beginning to understand how having an inaccessible site creates problems for residents and has begun to consider how assistive technology users will be impacted by changes the company makes to the GUI.

Some in-world communities have gone so far as to require in-world business establishments to comply with government regulations, including the Americans with Disabilities Act. Krueger tells the story of an in-world nightclub owner who changed the entrance of his club from stairs to a ramp and saw business increase 20 percent. Just as in real life, little accommodations make a world of difference, and they're good for business.

"Virtual worlds are the key to the next form of the Internet," says Eelke Folmer, an assistant professor at the University of Nevada-Reno, who authored a study on accessibility in Second Life (which I will discuss in greater detail in my next column). "We need to discover what makes them accessible before they become mainstream." ☒

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