Improving Access to the Virtual World

Universal design standards are opening doors to those with disabilities

I n 2009, I wrote two columns about virtual worlds. Much has stayed the same since then, and much has changed. Individuals who have disabilities still regularly participate in virtual worlds. Since 2009, additional studies have reinforced the premise that video games and virtual worlds provide serious real-world health benefits.

Two studies from East Carolina University prove this point. The first found that the use of certain video games by individuals with depression resulted in a reduction of symptoms in more than half of the experimental group; the second found that people who have brain injuries improved in cognitive response time and executive functioning by approximately 81 percent and 215 percent, respectively, when compared to control groups.

Virtual worlds are increasingly used in a "health provider" context. Consider the child with autism who can learn social skills online in a safe environment, or the adult who can replace some social interactions by going online when her real-world social structure all but evaporates after catastrophic injury. The military has multiple treatment centers that use virtual reality to treat PTSD and brain injury.

Virtual Ability (VA), an island in Second Life (SL), helps people with disabilities use online virtual worlds. The group requires that everything on the island comport with standards of universal design to ensure accessibility to the greatest number of residents. "There are no blue wheelchair signs [in VA]," says Alice Krueger, VA's president, "because everything is accessible."

Krueger states that while VA used to be one of the few places in SL that incorporated universal design, many residents in other parts of SL now contact VA regularly for guidance on making their environments accessible for residents who have disabilities.

To make the gaming experience better for people with disabilities, who make up approximately 20 percent of game users, manufacturers can do the following:

Talk about accessibility. "If game and virtual-world developers want to have people with disabilities as a major, respected, acknowledged portion of their clientele, [developers] should address accessibility issues on their Web sites," Krueger says.

> **Virtual Ability, an island in Second Life, helps people with disabilities use online virtual worlds.**

Be aware of users' needs. Manufacturers should be aware of the needs of the people using their equipment. The best way to do that is to communicate with users.

Consider the context of the activity. Look at where users want to use the tools you are providing. For example, able-bodied individuals use Xbox differently than people with disabilities use SL.

Publicize planned improvements. Let users know what improvements they can expect in the near future.

Software like Dragon has typically been cumbersome to use in SL, and for users who created speech macros, there was an additional layer of frustration; every time the SL interface was changed by Linden Lab (SL's creator), the scripted commands typically stopped working and had to be rewritten. Linden Lab's new viewer, released in early 2012, is now reported to be compatible with Dragon.

SL used to be a very popular virtual world, with 100,000 people logged in at a given time. Since Linden Lab alienated many users, the simultaneous login rate is closer to 5,000 people, reports Eelke Folmer, assistant professor in the department of computer science and engineering at the University of Nevada, Reno. While there are significantly fewer residents, SL content has actually become more accessible.

In 2009, Folmer reported that approximately 40 percent of objects created in SL were labeled "object." For SL residents using screen reading software, the description object is practically useless. Is it a horse, a tree, a fireplace? Now only approximately 5 percent of objects lack descriptions.

Another barrier is that there is no standard among screen readers. With one program, the user highlights text and the TTS software reads it; with another, if the user highlights text, the TTS software does not read it; another automatically reads the text even when the user does not highlight text.

From education to occupations to health care and beyond, virtual worlds will likely expand their offerings. Integrating speech technologies can only improve the user experience. ⊠