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CHI Readability Workshop Position Statement

"Design to Read" Response - February 2010



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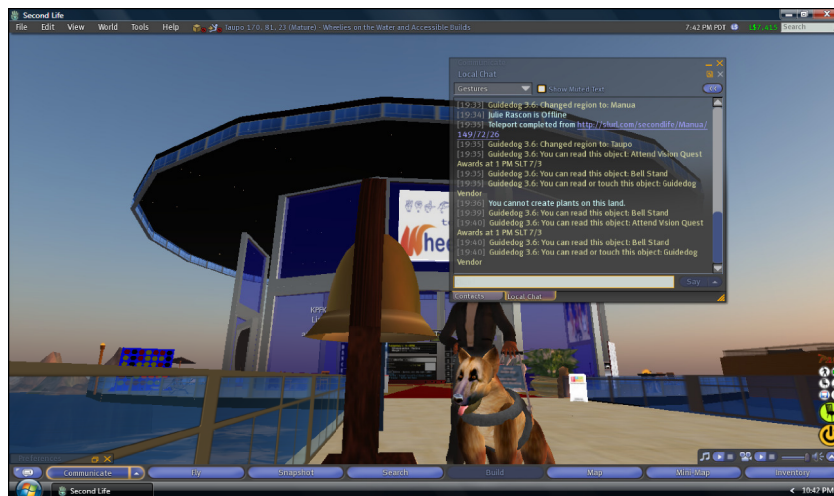
Past Work and Interest

Multi-user virtual environments (also called *virtual worlds*) are considered an extrapolation of *serious games* – software applications populated by *avatars* intended for use beyond pure entertainment. The main difference between a game and a virtual world is in the objective: game players expect to be confronted with obstacles intentionally built into the software, while users of virtual worlds seek to achieve self-directed goals through engagement and collaboration.

It would appear that virtual worlds have little to offer people with disabilities. The interfaces can be complex, with three-dimensional graphics and functionality requiring strong hand-eye coordination. However, a surprisingly vital demographic exists for whom avatar-driven 3D environments serve as more than just a game. People with a wide range of disabilities, including visual impairments, motor skill disorders and cognitive difficulties, have turned to virtual worlds to find entertainment, education, commerce and fellowship.

Reason for Current Interest in the Workshop

As virtual environments have become increasingly social and transactional, we must consider how these new forms of engagement can be inclusively designed to accommodate users of all abilities and competencies. Since virtual worlds operate as self-designed experiences, human practice is tied to the extensibility of users' actions through technology. Gaming applications have unfortunately not kept pace with the need to accommodate accessibility of content, even with surveys indicating a fifth of casual players self-identify as having some form of disability.¹



Virtual world users with hearing impairments benefit from an IBM add-on which translates spoken or written words into British Sign Language. Other programs use speech recognition technology to animate an avatar in real time during chats, speeches and digital broadcasts. For people who rely on screen-reading software, there are applications that provide the ability to interact with Second Life by interpreting semantic data assigned to virtual objects. Such prototypes help visually impaired users translate information via text-to-speech technology by “reading” signs, describing immediate surroundings and locating a player's proximity to items of interest.

There is a recognized value in having virtual environments be designed visually and experientially in accordance with Universal Design principles. Landscapes can be configured with high-contrast signage and smooth, wide walkways to ease motor skill and cognitive fatigue. Many users who have difficulty navigating virtual worlds with a mouse and keyboard benefit from voice recognition software or alternative input devices, which allow them to more precisely control their actions on the screen.

An area yet to be investigated, however, is some sort of baseline modality for such tasks as listening to audio playback, viewing visual material, comprehending written information or interpreting the context of an event. Anything that can make the screen easier to read or the cursor easier to move improves the overall user experience. Game interfaces are frequently designed to accommodate a high level of customization, and accessibility is a component of that architecture. These improvements tend to be more *technological* than *experiential*, however, and the crafting of content for virtual usage is an area of potentially rich exploration.



Critical Issues to be Explored

With greater interoperability between avatars and platforms, one could argue that virtual environments should be governed by the same design principles as other media. There may come a day when virtual worlds follow the Web Content Accessibility Guidelines (WCAG 2.0) of the W3C, just like text-based websites and other online properties. In the context of readability, specific issues to be discussed might include the following:

- Do the design guidelines currently applicable to the Web (WCAG 2.0) apply to virtual environments, and is there a case for making a priority to implement these practices?
- How will we define public accommodation, from both a technical and legal standpoint, within the realm of virtual environments?
- Is there an opportunity for crossover, from one digital platform to another, when designing online experiences for people with readability challenges? Can a semantic metadata standard be universally adopted among all platforms?
- Should the creators of virtual platforms be held accountable for the level of readability within their products? What governing body, if any, should be positioned to make recommendations on behalf of users?



References

1. Tim Ingham. (2008). 20% of casual gamers are disabled. (2008). Available from <http://www.casualgaming.biz/news/27527/20-of-casual-gamers-are-disabled>. Accessed 7 February 2009.