



## Accessing OWLs: Writing Center Usability Testing with Blind and Low-Vision Users

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### Overview

In 2005, Dr. Karl Stolley redesigned the Purdue Online Writing Lab (OWL) using standards-based guidelines (W3C, Section 508), which improved OWL accessibility and usability. In 2006, the first two generations (G1, G2) of usability research on the redesigned OWL yielded valuable information.

While G1 and G2 developed data that led to notable revisions, this testing did not address OWL accessibility and usability for people using assistive technologies (ATs) such as screen readers, adapted keyboards, and/or screen magnification to view the web. Therefore, OWL usability research continued into its third and fourth generations (G3, G4), collecting accessibility and usability information through an online survey and through tests conducted with blind and low vision users.

This session describes the methods, procedures, and results of G3 and G4 testing, and it provides guidelines and resources attendees can use to help their work. The panel also discusses web accessibility and larger issues of technological access and literacy practices of persons with blindness. The panel broadens our discussion beyond our immediate research and discusses the intersection between blindness, literate practices and Internet technologies. The panel also considers issues of web design and accessibility for online writing resources.

### Purpose and Goals

Given the notable increase in blind and low-vision users online<sup>1</sup>, and the importance of addressing the accessibility and usability needs of these users<sup>2</sup>, the purpose of G3 and G4 was to gather more information about OWL visitors using ATs so designers could improve the accessibility *and* usability of the OWL. Also, we recognize that there are added benefits to making web sites more accessible and usable for blind and low-vision users (electronic curb cuts)<sup>3</sup>. Therefore, the goals of G3 and G4 were to

- Learn more about blind and low-vision participants' experiences with writing, technology, Internet, and community
- Work one-on-one with blind and low-vision participants to design a more accessible, usable OWL
- Learn more about the needs of Purdue OWL visitors who use assistive technology.

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<sup>1</sup> "Worldwide, 180 million people are blind or visually impaired (World Health Organization 2001, qtd. in Theofanos and Redish 10). Many blind and low-vision people live in America: "...7.7 million people [live] in the U.S." (U.S. Department of the Census 1997, qtd. in Theofanos and Redish 10).

<sup>2</sup> It's clear that people with disabilities are new to using the Web for a variety of reasons: "Many of these users have embraced the Web as a way to get easier access to information, services, contacts with others, and entertainment" (Geest 23).

<sup>3</sup> "Easy-to-read content benefits all learners by 'chunking' the information into blocks of important information that can be easily read and understood by any audience" (Opitz 2002 qtd. in Kinash 6).

## G1 and G2 Background

- Why we did it: to learn more about the usability of the redesigned Purdue OWL.
- How we did it: we conducted two generations of mixed-methods usability testing – task-based testing and participatory build-your-own OWL activities.
- What we found: usability improved with the OWL redesign, but more changes (and testing) are needed. Read more about our findings at <http://owl.english.purdue.edu/research/>.

## Researching Disability: Intersections between Technology, Usability, and Persons with Blindness:

- Methodological ethical, and political issues surrounding usability testing with blind participants.
- Participatory research design and testing our test to see if our research methods were accessible.
- Research with blind participants takes more time for relationship-building, negotiating with institutional review boards, and educating researchers.

## Accessible ≠ Usable: User-Centered Theory and Usability Research with Blind and Low-Vision Participants

- The difference between accessible and usable: web sites that “validate” using Cynthia Says, Bobby, W3C are *not* necessarily usable for blind and low-vision visitors.
- Results of G3 and G4 what this tells us: OWL accessibility is good, usability needs improvement.
- How we plan to make changes and develop the OWL to address needs/findings: re-organize OWL splash page and interior pages, add site map, develop OWL research and writing resources *with* blind-low vision users, design OWL while using JAWS in adaptive lab, continue testing.

## Beginning the Conversation: An Ethnographic Study of Blind and Low-Vision Users' Experiences with the Purdue OWL

- Working closely with two participants in G4 provided valuable personal accounts and qualitative data about blind and low-vision users' experiences with adaptive technologies while navigating OWL and, more generally, the Internet.
- Analyzing the analyzers from a distance was challenging but offered unique perspectives regarding testing strategies and materials.

## For More Information

Purdue OWL Research page: <http://owl.english.purdue.edu/research/>.

“Usability Research and User-Centered Theory for 21<sup>st</sup> Century OWLs” by Dana Driscoll, Allen Brizee, Dr. Michael Salvo, and Morgan Sousa in *The Handbook of Research on Virtual Workplaces and the New Nature of Business Practices*. Eds. Kirk St. Amant and Pavel Zemplansky. Hershey: Idea Group Publishing, 2008.

*Accessibility Is Not Enough*. Ed. Jakob Nielson. 21 Nov. 2005. Jakob Nielson's Alertbox. 20 March 2008. <<http://www.useit.com/alertbox/accessibility.html>>.

DO-IT University of Washington. 20 March 2008. <<http://www.washington.edu/doit/>>.

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Theofanos, Mary Frances and Janice (Ginny) Redish. “Helping Low-vision and Other Users with Web Sites That Meet Their Needs: Is One Site for All Feasible?” *Technical communication* 52.1 (Feb., 2005): 9-20.