Jakob Nielsen's Alertbox, November 11, 2001:

Beyond Accessibility: Treating Users with Disabilities as People

Summary:
With current Web design practices, users without disabilities experience three times higher usability than users who are blind or have low vision. Usability guidelines can substantially improve the matter by making websites and intranets support task performance for users with disabilities.

It's time we moved beyond technical accessibility when discussing how to improve the Web for users with disabilities. We should consider these users as *users:* As people who have **jobs to perform and goals to accomplish** when they use websites and intranets. Once we've achieved technical accessibility, our new goal must be **task support** and increased usability of websites and intranets for people with disabilities.

Sure, users with disabilities *are* disabled, and many must use assistive technologies to access the Web. Obviously, websites must be accessible through alternative user interface devices, such as screen readers and screen magnifiers. If you can't get at the information or services that a website or intranet offers, then you definitely can't use it either. But, just because a design is theoretically accessible, doesn't mean that it's easy to use, simple to learn, or supports efficient job performance.

Usability is Three Times Better for Non-Disabled Users

We recently completed a major usability study of 19 websites in the United States and Japan, observing 84 users who were either blind or had low vision or motor impairments as they performed a variety of tasks. We also tested a control group of 20 users without disabilities.

We focused on design usability, aiming to identify which design elements slowed users down, confused them, or caused them to make errors, such as visiting the wrong part of a website. As always, we learned the most from our qualitative studies, where we asked users to think out loud as they used the sites. We also collected measurement statistics from four tasks:

- **Buy an item**: Purchase Janet Jackson's CD "All for You" from www.target.com.
- **Information retrieval**: Find a bus departing from O'Hare airport to a specific address in Chicago, using www.transitchicago.com.
- **Compare and contrast**: Find the best mutual fund satisfying certain criteria on www.schwab.com.
- **Fact-finding**: Find the average temperature in Dallas, Texas in January (for this task, participants could use any site they wanted).

The following table shows four usability metrics averaged across these tasks for three groups of users: people using screen readers (mainly users who were blind), people using screen magnifiers (users with low vision), and the control group of users without disabilities.

	Screen Reader Users	Screen Magnifier Users	Control Group (no disabilities)
Success Rate	12.5%	21.4%	78.2%
Time on Task (min:sec)	16:46	15:26	7:14
Errors	2.0	4.5	0.6
Subjective Rating (1-7 scale)	2.5	2.9	4.6

The control group's success rate was 78%, which is considerably higher than the success rates we've found in most of our other studies. Usually, success rates in Web usability studies range from 40% to 60%, so the current average of 78% for the control group probably indicates that the test tasks were a little bit easier than those in our other studies. At the same time, the tasks were not overly easy, as many members of the control group did not complete tasks, and the average task performance time was more than seven minutes.

The following table compares the control group's performance with an average of the two user groups with disabilities. In this table, we consider the usability measured for users with disabilities to be 100%; the usability experienced by the control group has been normalized relative to that level. Bigger numbers indicate better usability (higher success, faster task completion, fewer errors, and greater satisfaction).

	Relative score for users *without* disabilities
Success Rate	478%
Task Performance	222%
Error Avoidance	481%
Subjective Rating	172%
Overall Usability (geometric mean)	**306%**

As the table shows, the Web's current usability is about three times better for users without disabilities than it is for users with disabilities. This is a huge difference; the numbers are much bigger than we typically see in usability testing.

Is Equal Opportunity a Reasonable Goal?

Some critics of our study have claimed that having Web designs that treat people with disabilities three times worse than other users is not a big problem. After all, the argument goes, people with disabilities should expect some difficulties, and they should be grateful if a website aims for basic accessibility and allows them to use it at all. As these critics assess it, it is an unrealistic goal to make the Web as usable for users with disabilities as it is for those without.

I will grant these critics that it may be hard to achieve truly equal usability for the two user groups. In other words, the above **table would probably not read "100%,"** even for sites that followed all of our usability recommendations for making websites and intranets easier to use for people with disabilities.

However, accepting the level of discrimination implied by treating people with disabilities three times worse is unreasonable. We can reach much better levels by reducing the usability problems in Web designs. Although we probably won't achieve perfection, focusing on usability can significantly improve the user experience for people with disabilities relative to the current horrible state of websites and intranets.

Our report documents **numerous design flaws** that reduce the Web's usability for users with disabilities. In other words, changing the designs to comply with the usability guidelines would reduce the difference in usability for users with and without disabilities. We are not stuck at the current level -- things can get better.

Many of the usability problems are very cheap to fix, especially if designers are aware of the usability guidelines *before* constructing the site. Retrofitting something that's designed wrong is more expensive, but still worth it for a company that values employee productivity (for intranets) and customer relationships (for public websites).

As an analogy, consider the case of **a person entering a building using a wheelchair**:

- In a well-designed building, the access ramp goes **directly from the street** to the front door, and lets the visitor off near the elevator. In such a building, visitors with and without wheelchairs will reach, say, a conference room on the seventh floor in about the same amount of time.
- If the access ramp is at the **back of the building**, a visitor in a wheelchair has to move around the building, enter, and then spend quite some time navigating the ground floor to reach the elevator. Even though the seventh floor conference room is theoretically accessible, the less-well-designed building treats visitors in wheelchairs significantly worse than those who can walk in from the street and reach the elevator in seconds.

Usability is not just a matter of whether or not it is *possible* for a user to perform a task. It is also a matter of how *easy* and *fast* it is for them to do so.

As long as companies and government agencies **view accessibility as solely a matter of complying with regulations** and technical specifications, rather than a way to **support the work practices and customer needs** of people with disabilities, equal opportunity will remain a travesty. Websites and intranets must follow usability principles and make it easier for customers and employees with disabilities to perform their tasks.

Learn More

Our 148-page report with 75 design guidelines for improving website and intranet usability for users with disabilities is available for download.

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