Jakob Nielsen's Alertbox, April 14, 2002:

Kids' Corner: Website Usability for Children

Summary:
Our usability study of kids found that they are as easily stumped by confusing websites as adults. Unlike adults, however, kids tend to view ads as content, and click accordingly. They also like colorful designs, but demand simple text and navigation.

Millions of children already use the Internet, and millions more are coming online each year. Many websites specifically target children with educational or entertainment content, and even mainstream websites are adding "kids' corner" sections for children -- either as a public service or to build brand loyalty from an early age.

Despite this growth in users and services, very little is known about how children actually use websites or how to design sites that will be easy for them to use. Most website designs for kids are based on **pure folklore about how kids supposedly behave** -- or, at best, by insights gleaned when designers observe their own children, who are hardly representative of average kids, typical Internet skills, or common knowledge about the Web.

Testing Children's Web Use

To find out how kids really use the Web, we conducted usability studies with 55 children who varied in age from 6 to 12 (first through fifth graders). We tested 39 kids in the United States and 16 in Israel, to broaden the international applicability of our recommendations. (See also our separate study of teenage users, aged 13-17.)

We observed the children interacting with 24 sites designed for children, and three mainstream sites designed for adults (Amazon, Yahoo!, and Weather.com). For the targeted sites, we tested some sites specifically devoted to children, such as Alfy, MaMaMedia, and Sesame Street, and several kid-oriented subsites produced by mainstream companies, such as ABC News for Kids and Belmont Bank's Kids' Corner.

Even though participants in our study were very young, they often had the **greatest success using websites intended for adults**. Sites such as Amazon and Yahoo! are committed to utter simplicity and compliance with Web design conventions, and have become so easy to use that they support little kids very

well. In contrast, many of the children's sites had complex and convoluted interaction designs that stumped our test users. As one first-grade boy said, *"The Internet is a lot of times BORING because you can't find anything when you go on to it."*

Usability Problems Hurt Kids

The idea that children are **masters of technology** and can defeat any computer-related difficulty is a myth. Our study found that children are **incapable of overcoming many usability problems**. Also, poor usability, combined with kids' lack of patience in the face of complexity, resulted in many simply leaving websites. A fourth-grader said, *"When I don't know what to do on a Web page, I just go look for something else."*

Also, children don't like slow downloads any more than adults do. As one first-grade girl said, *"Make it go faster! Maybe if I click it, it will go faster..."*

Young children often have **hand-me-down computers**, whether at home (where they often inherit older machines when their parents upgrade) or at school (where budget constraints mandate keeping machines in service for many years). Kids also typically have slow connections and outdated software. Given these limitations, websites must **avoid technical problems** or crashes related to access by low-end equipment. Faced with an error message, kids in our study told us that they see them a lot, and that the best thing to do is to ignore them or close the window and find something else to do.

Several types of **classic Web usability problems** caused difficulties for the kids in our study:

- **Unclear navigational confirmation** of the user's location confused users both within sites and when leaving them.
- **Inconsistent navigation** options, where the same destination was referred to in different ways, caused users to visit the same feature repeatedly, because they didn't know they had already been there.
- **Non-standard interaction techniques** caused predictable problems, such as making it impossible for users to select their preferred game using a "games machine."
- **Lack of perceived clickability** affordances, such as overly flat graphics, caused users to miss features because they overlooked the links.
- **Fancy wording** in interfaces confused users and prevented them from understanding the available choices.

Age-Appropriate Content

Extensive text was problematic for young children, who are just beginning to read. We observed severe usability problems when kids were inadvertently thrown into

sections that were written above their current reading level.

Also, kids are **keenly aware of their age** and differentiate sharply between material that is appropriate for them and material for older or younger kids, however close in age they might be. At one website, a six-year-old said, *"This website is for babies, maybe four or five years old. You can tell because of the cartoons and trains."*

Differences between Children and Adult Users

Our usability findings for **kids often differed from those we typically find when testing adult users**. Some of the more striking differences were:

- **Animation and sound effects** were positive design elements for children; they often created a good first impression that encouraged users to stay with a site.
- Children were willing to "mine-sweep," **scrubbing the screen with the mouse** either to find clickable areas or simply to enjoy the sound effects that different screen elements played.
- **Geographic navigation metaphors worked**: Kids liked the pictures of rooms, villages, 3D maps, or other simulated environments that served as an overview and entry point to various site or subsite features.
- Children **rarely scrolled** pages and mainly interacted with information that was visible above the fold. (We also observed this behavior among adult Web users in 1994, but our more recent studies show that adults now tend to scroll Web pages.)
- Half of our young users were **willing to read instructions**; indeed, they often *preferred* to read a paragraph or so of instructions before starting a new game. In contrast, most adult users hate instructions and try to use websites without having to read about what they are supposed to do.

Most of these differences are related to differences in the online activities of children and adults. Diverse design elements and multimedia effects tend to work for children. Unlike adults, who typically use the Web in business settings and for goal-oriented tasks, children often use the Web for entertainment, though older kids also use it for schoolwork and community.

Advertising Works

The most notable finding in our study was that **children click website advertisements**. Unfortunately, they often do so by mistake, thinking ads are just one more site element. In nine years of testing adults, we can count on the fingers of two hands the total number of times they've clicked website advertising. But kids click banners. They **cannot yet distinguish between content and advertising**. On the contrary, to kids, ads are just one more content source. If a banner contains a popular character or something that looks like a cool game,

they'll click it. *Pokémon, here we come.* (Kids clicked on Pokémon characters even though they were simply featured in banner ads for other products, rather than as links to a Pokémon site.)

We strongly recommend that parents, educators, and other caretakers **spend time acquainting children with the realities of Internet advertising** and teach them how to recognize ads. Many people already help their children understand and cope with television commercials, but such educational efforts seem to overlook Web ads -- possibly because most adults would never dream of clicking them. Adults don't view Web ads as a big issue, because they've trained themselves to tune out the ads subconsciously through *banner blindness,* which continues to operate even when adults visit children's sites.

Many of the websites in our study tried to differentiate editorial from advertising by marking banners with "AD" or "PAID." This tactic didn't work. Kids in our study didn't notice these subtle markers, but were attracted to the colorful characters and games in the ad.

Gender Differences

In this study, we found **bigger differences between boys and girls than we usually find** when testing adult men and women. Boys were significantly more annoyed by verbose pages than were girls (40% of the boys complained, compared to 8% of the girls), possibly because at the ages we tested, boys are not as accomplished at reading as girls. In contrast, girls complained much more than boys when sites lacked good instructions (76% of the girls compared to 33% of the boys). Also, boys spent more time alone with computers, and girls spent more time using computers with a parent.

Despite the differences, most of our conclusions regarding good Web design for kids hold **equally true for boys and girls**. Most of the usability issues relate to human-centered technology use and age-appropriate design, not to gender differences.

Nonetheless, we strongly recommend that anyone planning to run usability studies with children strive to include equal numbers of boys and girls. When studying adult users, we always try to include a reasonable representation of both genders, but the numbers need not be identical. Although men and women sometimes differ in the type of content that interests them, in terms of interaction design, the big issue is bridging the gap between humans and computers -- not how to accommodate the comparatively smaller differences between the genders. For kids, however, the differences are bigger and thus there is a greater need for a balanced set of test participants.

Cool Content, Simple Interaction

Children want content that is entertaining, funny, colorful, and uses multimedia effects. However, for homepage design and navigation systems, the user interface should be unobtrusive and let kids get to the content as simply as possible. Children enjoy exploration and games, but it should not be a challenge to operate the website itself. The content should be cool, but the design must offer high usability or kids will go elsewhere.

Learn More

Our 128-page report with 70 usability guidelines for designing websites for children is available for download.

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