

NASN Conference Presentation School Nurse & Health Website Communication and Usability

The School Nurse and Health Website was designed for school nurses to communicate, collaborate, and share knowledge. For the Website project we utilized best practices in website development and usability as well as gathering input from the school nurse community. It was this goal of providing information and resources, in a usable structure, that guided the information architecture.

Communication

The Web has become a popular and ubiquitous form of communication and its exponential growth has been well documented.¹ Tim Berners-Lee², the inventor of the World Wide Web, visualized the “power in arranging ideas in an unconstrained, weblike way.” He went on to build what we have come to know as a universal means of communication. His vision coupled with Peter Denning’s³ paradigm shift in higher education where “Internet communication will transform learning practices from the sequential classroom curriculum to nonlinear hyperlearning [the prefix “hyper” in this context means nonlinear and multidimensional] environments” has transformed the Web into a powerful media of communication. It is through this weblike structure that we are enabling school nurses to collaborate on best practices, exchange ideas, and share knowledge.

Usability

Throughout the design phase of the Website we have utilized best practices and proven techniques. Early on we developed a persona-based design⁴ strategy in which we conducted surveys, questionnaires, and interviews to guide the appearance and functionality of the website. We incorporated established theories in developing the menus, such as George Miller’s⁵ 1956 seminal theory “The Magical Number Seven, Plus or Minus Two: Some Limits’ on Our Capacity for Processing Information” which states that people can remember or discern seven things quickly, with nine items being the most people can differentiate quickly. Using this theory we structured our website menu to have seven to nine major divisions of content with three to five levels of subcategories. Furthermore, we consistently worked to remove or limit extraneous words from the menu that could make it difficult to scan quickly. Within our information architecture the depth of content and how well or efficiently we organize our content has been a guiding principle throughout the development process.

¹ [Internet World Stats](#), [Online Computer Library Center](#), [University of Pennsylvania Internet Statistics](#)

² Berners-Lee, Tim. *Weaving the Web*. Harper San Francisco, 1999.

(Tim Berners-Lee is currently the director of the World Wide Web Consortium and chair at the MIT Laboratory for Computer Science.)

³ Denning, Peter J. *Beyond Calculation: The Next Fifty Years of Computing*, Copernicus, 1997.

(Peter J. Denning, Ph.D. is the Associate Dean for Computing and Chair of the Computer Science Department at George Mason University, formerly the founding director of the Research Institute for Advanced Computer Science at NASA Ames Research Center.)

⁴ [Website Redesign](#), November 15, 2003 issue of CIO Magazine

⁵ Miller, George A. (1956), *The magical number seven, plus or minus two: Some limits on our capacity for processing information*, *The Psychological Review*, 81-97.

Another accepted principle in information architecture that we employed was the Three-Click Rule⁶ which states that the target depth of content on a website should never be more than three clicks. Though some usability experts challenge the usefulness of this rule, especially on large websites, the rule ensures that content architects are always thinking about the website navigation system and categorizing of information based on importance.

Other usability principles that we incorporated came from Jakob Nielsen⁷, *Designing Web Usability*, where he recommends navigation standards for embedded links, structural links, and associative links. We also incorporated his ideas on content hierarchical structure and progressive levels of information, as well as breadcrumb navigation which gives users a sense of their current location relative to the site structure. We also included a convenient search feature based on feedback from school nurses we surveyed.

Other sources used but not cited during the website design phase:

- *The Design of Sites: Patterns, Principles, and Processes for Crafting Customer-Centered Web Experience*, Van Duyne, et. al.
- *Don't Make Me Think: A Common Sense Approach to Web Usability*, Steve Krug
- *Designing Web-Based Training*, William Horton, Ph.D.
- *Web-Based Training Cookbook*, Brandon Hall, Ph.D.

⁶ See [User Interface Engineering](#) and [Usability By Design](#) for more information on the Three-Click Rule.

⁷ Nielsen, Jakob. *Designing Web Usability*, New Riders, 2000

(Jakob Neilson, Ph.D., principal of the Nielsen Norman Group, former VP of Research at Apple Computer and Sun Microsystems Distinguished Engineer).