



# Navigation Guidelines



# Objectives

After this module, you will be able to:

- Explain the differences between using the TOC, index, and search
- Describe the benefits of browse sequences
- Describe how to organize links



## Number of Clicks

- Users, especially older users, have trouble with tasks that required 3 or more clicks.
- Mead, S. E., Spaulding, R. A., Sit, B. M. and Walker, N. (1997). "Effects of age and training on World Wide Web navigation strategies." In *Proceedings of the Human Factors and Ergonomics Society 41st Annual Meeting*, 152-156.



# TOC Depth and Preference

- Deeper menus are seen as more complex and less favorable.
- Jacko, J. A., Salvendy, G. (1996). "Hierarchical menu design: breadth, depth and task complexity." *Perceptual Journal of Motor Skills*, 82, 1187-1201.
- Kiger, J. L. (1984). "The depth/breadth trade-off in the design of menu-driven user interface." *International Journal of Man Machine Studies*, 20, 201 - 213.



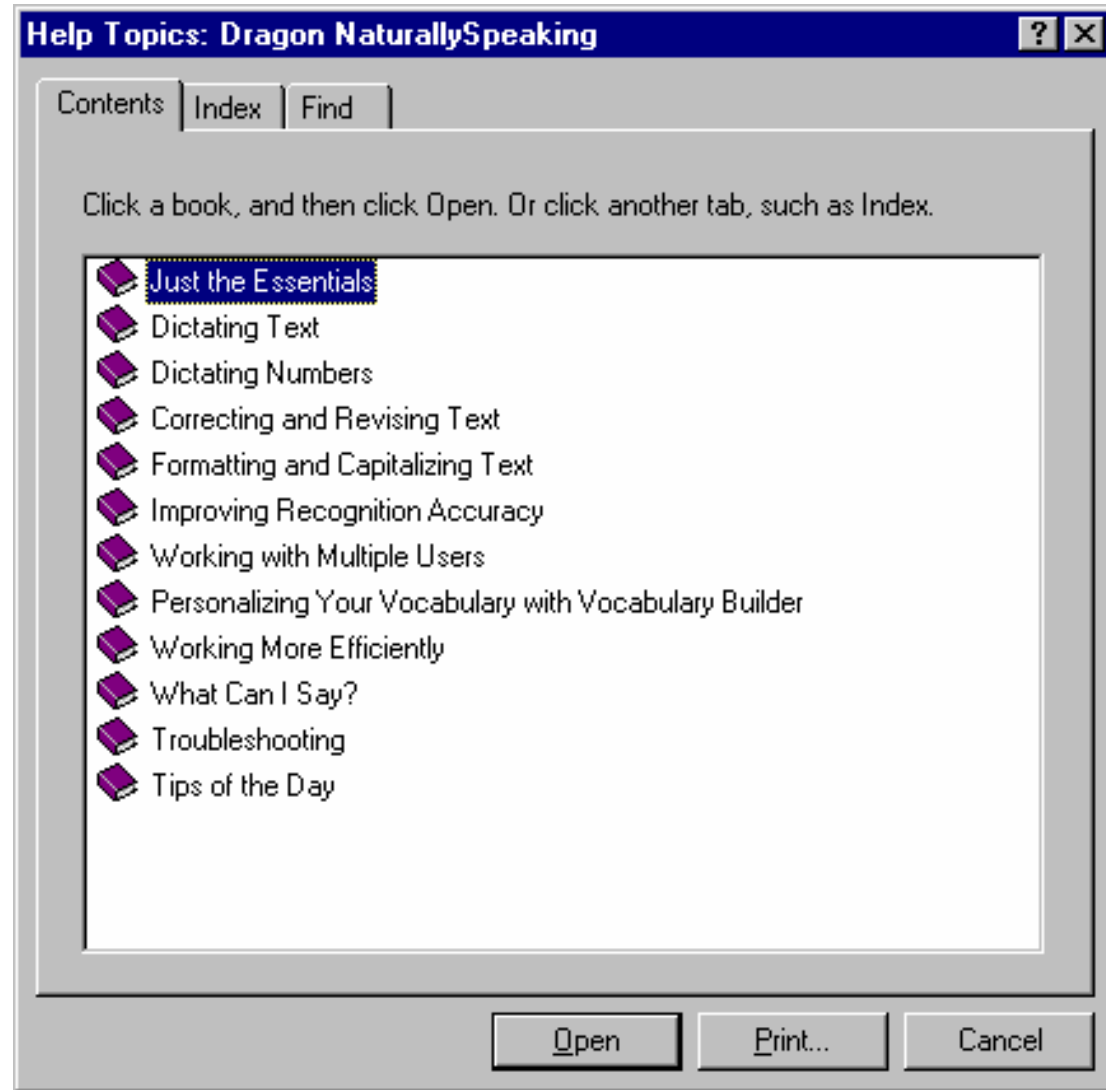
# TOC Depth Guideline

- Menus should be broader at the top and/or bottom, and narrow in the middle.
- Lee, E., MacGregor, J. (1985). "Minimizing user search time in menu retrieval systems." *Human Factor*, 27, 157-162.
- Norman, L. K. (1991). *The Psychology of Menu Selection: Designing Cognitive Control at the Human/Computer Interface*. Norwood, NJ: Ablex.



# TOC Organization Guideline

- Organize by task, frequency, and complexity





# TOC Versus Index

- Users prefer the index to the TOC.
- Nichols, M. C. (1996). "The role of display tools in implementing effective online help systems." Thesis at North Carolina State University.



# A Good Index Makes a BIG Difference

One study found:

- 75% success rate if the term was in the index.
- 4% success rate if the term was not in the index.

- Yussen, S. R., Stright, A. D., and Payne, B. (1993). "Where is it? Searching for information in a college textbook." *Contemporary Educational Psychology*, 18, 240-257.





# TOC Versus Search

- Users prefer the TOC to a search tool.
- Campagnoni, F. R. and Ehrlich, K. (1989). "Information retrieval using a hypertext-based help system." *ACM Transactions on Information Systems*, 7(3), 271-291.
- Carey, T. L., Hunt, W. T. and Lopez-Suarez, A. (1990). "Roles for tables of contents as hypertext overviews." In *Proceedings of Human-Computer Interaction--INTERACT 1990*, 581-586.



# Search

- Users have to learn how to use full-text search, especially Boolean searches.
- Liebscher, P., Marchionini, G. (1988). "Browse and analytical search strategies in a full-text CD-ROM encyclopedia." *School Media Library Quarterly*, 223-232.
- Marchionini, G., Dwiggins, S., Katz, A., Lin, X. (1993). "Information seeking in full-text end-user-oriented search systems: The roles of domain and search expertise." *LISR* 15, 35-69.

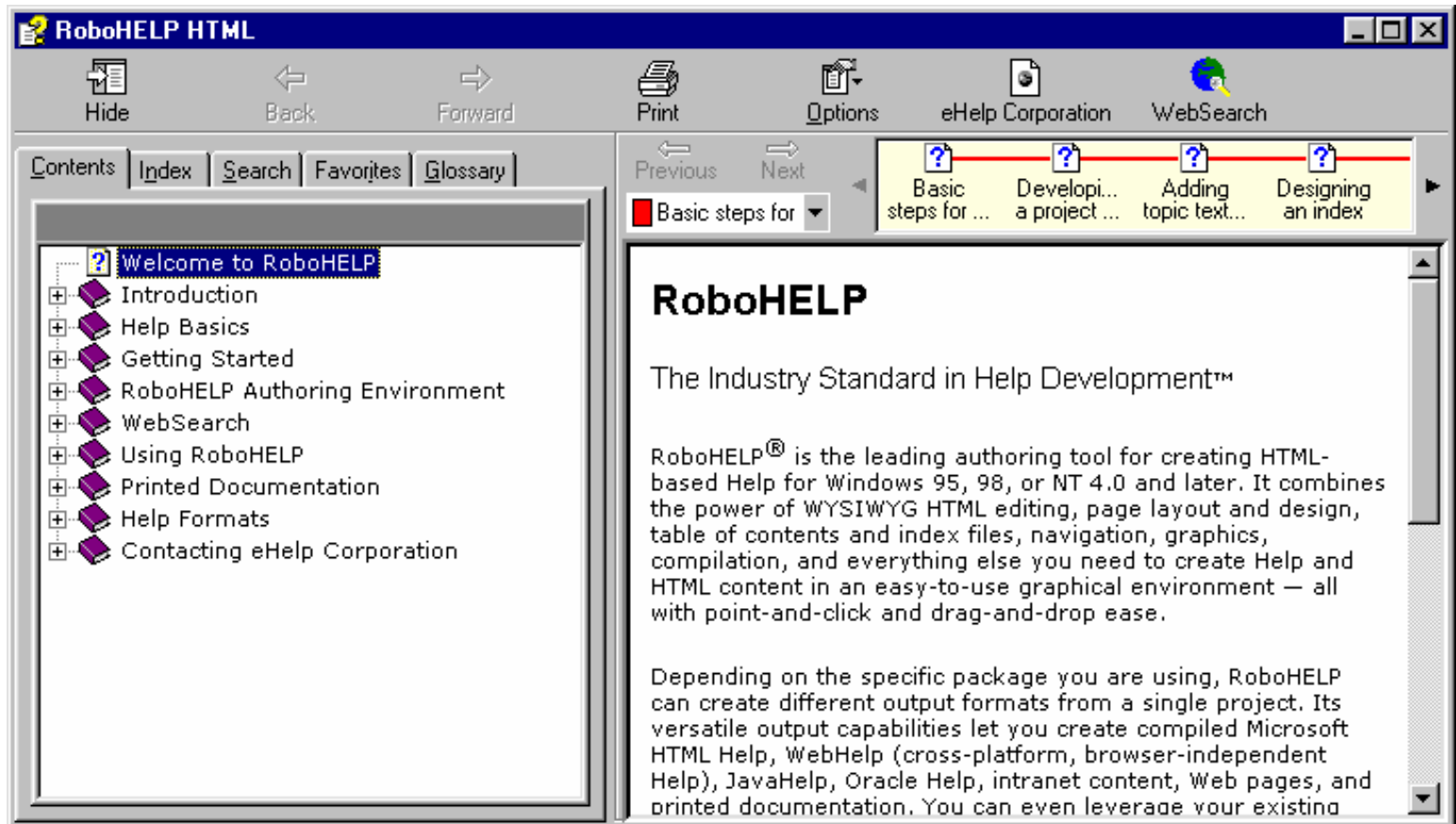


# Browse Sequences

- Browsing supports exploratory learning.
- Wiedenbeck, S., Zila, P. L., McConnell, D. S. (1995). "End-user training: an empirical study comparing on-line practice methods." In *Proceedings CHI'95 Human Factors in Computing Systems*.
- Marchionini, G. (1989). "Making the transition from print to electronic encyclopedias: adaptation of mental models." *International Journal of Man-Machine Studies*.



# Browse Sequence Example





# Links and Columns

- Scanning a horizontal list of links is significantly slower than scanning vertically arranged links.
- Nygren, E. and Allard, A. (1996). "Between the clicks: skilled users scanning of pages." In *Human Factors and the Web/HTML Conference*. Albuquerque, NM: Sandia National Laboratories.



## Links Are Distracting

- One study showed that 93% of links in a page were clicked.
- Wright, P., (1991). "Cognitive overheads and prostheses: some issues in evaluating hypertexts." In *Proceedings of ACM Hypertext 91 Conference*, 1-12.



# Links Can Cause Confusion

- Clearly distinguish between actions that move within a topic and those that jump to another topic.
- Petrauskas, B. F. (1987). "Online documentation: putting research into practice." In *Proceedings of 34<sup>th</sup> International Technical Communication Conference*, Washington, DC: Society for Technical Communication.



# Link Type Example

The screenshot shows a Microsoft Internet Explorer window displaying the MSDN Online XML Developer Center. The browser's address bar shows the URL <http://msdn.microsoft.com/xml/default.asp>. The page features a navigation bar with links to All Products, Support, Search, and the Microsoft.com Guide. Below this is a header with the XML logo and the text "Extensible Markup Language". A secondary navigation bar includes links to Home, Magazines, Libraries, Developer Centers, Resources, Downloads, Code, and Search MSDN. A welcome message states "Welcome to the XML Developer Center" and notes the last update as "April 25". The main content area is divided into three columns. The left column contains a list of links: XML SDK Documentation, Other XML Technical Information, XML Code Samples, XML Downloads, XML Newsgroups, XML Chats, Members Helping Members, Developer Events, XML Books, Extreme XML Column, MSXML Parser 3.0 Release, and MSXML Parser 3.0 Service Pack 1 Release. The middle column features a section for "MSXML Parser 4.0 Technology Preview", which includes a description of the preview and a graphic with the text "MSXML Parser 4.0 technology preview", "sax2", "msxml", "XSLT", and "xpath". The right column features a section for "SOAP Toolkit 2.0 RCO", which includes a description of the toolkit and a graphic with the text "SOAP Toolkit 2.0 RCO". The browser's status bar at the bottom shows the "Internet" icon.

MSDN Online XML Developer Center - Microsoft Internet Explorer

File Edit View Favorites Tools Help Send

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss

Address <http://msdn.microsoft.com/xml/default.asp> Go Links >>

msdn online developer center All Products | Support | Search | microsoft.com Guide

xml XML Extensible Markup Language Microsoft

Home | Magazines | Libraries | Developer Centers | Resources | Downloads | Code | Search MSDN |

Welcome to the XML Developer Center Last Updated: April 25

- XML SDK Documentation
- Other XML Technical Information
- XML Code Samples
- XML Downloads
- XML Newsgroups
- XML Chats
- Members Helping Members
- Developer Events
- XML Books
- Extreme XML Column
- MSXML Parser 3.0 Release
- MSXML Parser 3.0 Service Pack 1 Release

**MSXML Parser 4.0 Technology Preview**

This technology preview provides a solid look at a number of important new features of MSXML 4.0, including XSD language validation in the DOM and XSD support

**MSXML Parser 4.0 technology preview**

**SOAP Toolkit 2.0 RCO**

Download the first Release Candidate of the Soap Toolkit 2.0 and get several major enhancements, including a new ISAPI listener and support for simple arrays. (April 6, Download)

Internet





# Discussion

If you were creating a help system about Wiesbaden...

- How would you organize the TOC?
- How will you meet the needs of different users?
- How will you use browse sequences and related topics links?