# Apple Guide:
# A Case Study in User-Aided Design of Online Help

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## ABSTRACT

Apple Guide, the new online help system in Macintosh system software, provides a standard human interface to online help on the Macintosh. It is the culmination of extensive study at Apple of how users can work most effectively with online help. This paper summarizes several of the major studies in Apple's research, briefly describing the research methods used, major findings, and how those findings contributed to the design of Apple Guide.

**KEYWORDS:** Online help, user studies, instructional design.

## CATEGORIZING USERS' QUESTIONS

Although the exact origins of Apple Guide are difficult to trace, a strong early influence was work done by Apple's Human Interface Group in 1987. The Human Interface Group reviewed literature on help, looked at existing help systems, and conducted videotaped studies of user behavior.

In one study users were observed thinking aloud while performing tasks in HyperCard. Users' questions were then classified into five general forms: goal questions ("What kinds of things can I do with this program?"), descriptive questions ("What is this? What does this do?"), procedural questions ("How do I do this?"), interpretive questions ("Why did that happen?" "What does this mean?"), and navigational questions ("Where am I?").

In a follow-up study, users were asked to perform tasks using MacDraw. This time they used a prototype help system that required them to frame questions by first clicking one of three buttons corresponding to common question types: "How do I...?" "What is...?" and "Why...?" (A fourth button allowed users to type their own questions, in case none of the predefined categories was adequate.) The researchers found that the categories of "How do I...?" "What is...?" and "Why...?" were adequate to cover almost all of the subjects' questions. They also found that "How do I...?" questions were asked most frequently.

This categorization of question types has influenced the function of items in the Guide menu on the Macintosh.
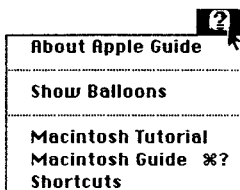


*The Guide menu for the Macintosh Finder*

For instance, Balloon Help—which allows users to identify objects on the screen by pointing at them—was designed specifically to answer "What is...?" questions. Apple Guide can accommodate any type of question, but it is primarily designed to answer "How do I...?" questions.

## DESIGNING A HELP ACCESS SCREEN

In subsequent studies, the Human Interface Group investigated designs for screens that would allow users to access specific help topics.

In the first round of testing, users worked with a prototype that let them construct a question by choosing a question type (such as "How do I...?"), an action (such as "delete"), and an object (such as "paragraphs"). The researchers found that the function of this access screen was not obvious to users. Several users did not see the actions and objects as components for building a sentence.

That led to the design of an access screen based on the table of contents of a book. Information was organized in a two-level hierarchy on a single screen. When the user clicked a task on the left, a list of associated subtasks appeared on the right. Users said they preferred this design because it was easy to scan and allowed them to easily backtrack if they clicked a topic they didn't want.
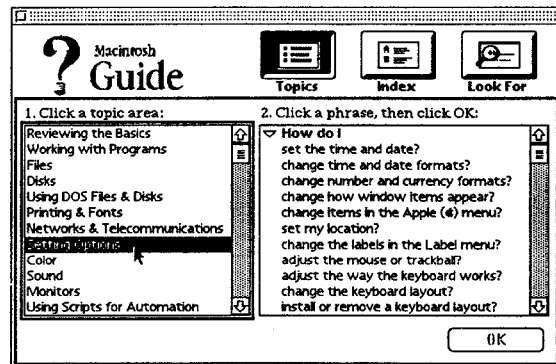


*Example of an Apple Guide help access screen*

In 1990 Apple's Instructional Products group, working in tandem with the User-Aided Design group, tested more fully developed models for help access screens. They tested four different prototypes, each with some combination of the following options:

- a topics screen that lets users click an item in a short list of broad topic categories (like the table of contents in a book) to see a list of related questions

- an index screen that lets users click an item in a long alphabetical list of topics (like the index in a book) to see a list of related questions

- a "Look For" screen that lets users type a word or phrase, then click a Search button to see a list of related questions

The researchers found that all three access screens were useful. Novices preferred the topics screen because it didn't require them to know specific computer terminology. Experts preferred the index because it let them narrow in on a specific topic more quickly. Experts also liked the Look For screen when the word they had in mind wasn't listed in the index. Based on this feedback, all three options are available in Apple Guide help access screen.

## STEPPING USERS THROUGH TASKS

Of course getting users to ask the right questions is only part of the problem; a help system has to give users answers in a form they can use.

Early prototypes designed by the Human Interface Group presented instructions in a small window of text. Users could page forward or backward by clicking right arrow and left arrow buttons. There were no scroll bars because scrolling would disturb the intended layout of the information.

A similar interface—in which users paged through screens of instruction by clicking arrow buttons—was used in the Macintosh Electronic Reference, a HyperCard version of the system software reference manual developed by Instructional Products. User testing of the Macintosh Electronic Reference illuminated many of the problems with traditional forms of online documentation:

- When users invoked help, they switched out of the application they needed to use to complete their task.

- When users tried to follow the instructions, they switched out of help, and their instructions were often covered by another application's windows.

- Because of the two problems just noted, users had to read and remember a series of instructions before they tried to perform them.

- Users often got out of step with the instructions, sometimes failing to perform instructions.

- Users were confused by the illustrations in the instruction windows, mistaking them for functioning interface elements that they should click.

Based on these experiences with more traditional forms of online information, the fundamental design goals for Apple Guide were established:

- Help should appear in the same application layer as the application being used to complete the task.

- Instructions should be presented in small chunks to minimize the user's reliance on memory.

- When a user fails to perform an instruction, the help system should send the user back to that instruction (or do the step automatically).

- When an instruction has already been completed by the user, the help system should skip over the instruction.

- Rather than showing an illustration of an object on the screen, the help system should point out the actual object (by drawing a circle around it).
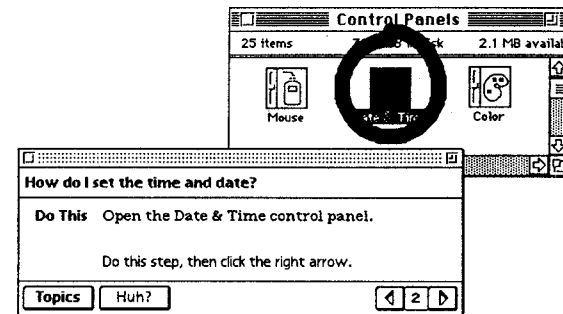


*Example of an instruction in Apple Guide*

In 1991 the design team began building prototypes in SuperCard for a simple drawing program with a fully functioning help system. In each round of testing, users were asked to create a drawing, thinking aloud as they worked.

The team conducted seven rounds of prototyping, testing, and revision. To measure the effects of changes to the design, the team tracked the frequency of critical incidents. For example, in early rounds of testing some users had difficulty locating the right arrow for moving forward. Problems such as this were identified as critical incidents, and their frequency was tracked in subsequent studies. As the design evolved, the frequency of critical incidents diminished to an acceptable level.

By 1992 the first working version of the Apple Guide system extension had been engineered, enabling the team to observe users interacting with a prototype help system for the Macintosh Finder. By this point the software interface was fairly well established, so the focus shifted to how to best represent users' questions and how to write clear and concise instructions to guide users through tasks.

By the fall of 1994, Apple Guide began shipping with Macintosh computers. The focus of user studies of Apple Guide now shifts from the lab to the field, with plans in the works for field studies, phone surveys, and automated data collection.

## FOR MORE INFORMATION

Anyone interested in developing an Apple Guide help system should contact APDA, Apple's source for developer tools, at apda@applelink.apple.com.