Cognitive Walkthrough
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Sources:

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Cognitive Walkthrough

Focuses on one attribute of usability: ease of learning

But other aspects of usability, like functionality and ease of use, are correlated with ease of learning

Will push your design in the direction of ease of use.

Not ideal for highly trained users or efficiency-oriented interfaces.

- Nuclear power plant operators
- Air traffic controllers
- Telephone operators

Assumes that users will not read the manual first

Relates to the basic cycle of human information processing.

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Preparation Phase

Who are the users of the system?
- The more precise the description, the better.
- Example: Users who already know how to prepare and print a simple document using Word 98.

What are the tasks?
- A reasonable representative collection of routine tasks.
- For existing system, perhaps just the known problem areas
- Should relate the the problem statement.
- Should be concrete and realistic.

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Two Phases of Cog.Walk.

Preparatory
- Analysts agree on the input conditions and prepare the materials.

Analysis
- Analysts work through each action of every task being analyzed.
Preparation Phase (continued)

What is the correct action sequence for each task?
• At the level of detail necessary to guide the user through the interface
• What would appear in a help system or manual

How is the interface defined?
• Describe the prompts preceding every user action
• Describe the interface’s reaction to the actions
• The interface does not need to be implemented yet.

Analysis Phase

Walk through the interaction telling a credible story.

At every step or prompt, consider:
1. Will the user know the correct subgoal or subtask?
   - Example: Print or select printer first?
2. Will the user know that the correct action is available?
   - Example: Any clues for how to print?
3. Will the user associate the correct action with the subgoal?
   - Example: Type “lp” or find in menu?
4. If the correct action is performed, will the user know that progress is being made toward the goal?
   - Example: Is it being printed?

Question

Is the cognitive walkthrough limited to interfaces you can see?

Which interfaces succeed and which fail?

To succeed, a credible story must be told for all four questions at every step of the way.

If a credible story cannot be told for just one question at one step, you have identified an interface failure.
Analysis Phase

Good idea to videotape it, to go back and verify or retrace comments or decisions.

As you go, record assumptions about what user would know prior to performing the task, and what the user would learn while performing the task.

If you identify a problem, write it down, assume the correct action was made, and press on.

How to fix the breakdowns:
If the user does not know...

1. Which subgoal to accomplish
   • Eliminate the required action
   • Prompt the use to make the action
   • Re-organize the interface to more closely support the users’ anticipated task hierarchy

2. The action is available
   • Make the controls more obvious, as with a prompt or a menu

3. The action is appropriate
   • Provide labels and descriptions for actions that incorporate the users’ vocabulary
   • Reword labels selected in error

4. Progress is being made
   • Prompt for the next correct action.
   • Provide feedback regarding what happened, ideally in the users’ vocabulary.

Let’s do a simple one

Preparation
• Who are the users?
  - New user with data already loaded, or an experienced user who is not fully focused on this task.
  • What tasks will be analyzed?
    - Find Jeffrey Stolet’s phone number
    - Find Mark Timoney in New York’s work number
• What is the correct action sequence for each task?
• How is the interface defined?

Cognitive Walkthrough

A formalized methodology to check for gulfs of execution and evaluation

Focuses on ease-of-learning, but other aspects of usability are correlated with ease of learning

Does not assume highly trained users

Does not predict execution times
A lengthier discussion

is available in Chapter 4 of the downloadable book: