

# Cognitive walkthrough

The **cognitive walkthrough** method is a [usability inspection method](#) used to identify [usability](#) issues in interactive systems, focusing on how easy it is for new users to accomplish tasks with the system. **Cognitive walkthrough** is task-specific, whereas [heuristic evaluation](#) takes a holistic view to catch problems not caught by this and other [usability inspection methods](#). The method is rooted in the notion that users typically prefer to learn a system by using it to accomplish tasks, rather than, for example, studying a manual. The method is prized for its ability to generate results quickly with low cost, especially when compared to [usability testing](#), as well as the ability to apply the method early in the design phases, before coding even begins.

## Introduction

A cognitive walkthrough starts with a [task analysis](#) that specifies the sequence of steps or actions required by a user to accomplish a task, and the system responses to those actions. The designers and developers of the software then walk through the steps as a group, asking themselves a set of questions at each step. Data is gathered during the walkthrough, and afterwards a report of potential issues is compiled. Finally the software is redesigned to address the issues identified.

The effectiveness of methods such as cognitive walkthroughs is hard to measure in applied settings, as there is very limited opportunity for controlled experiments while developing software. Typically measurements involve comparing the number of usability problems found by applying different methods. However, Gray and Salzman called into question the validity of those studies in their dramatic 1998 paper "Damaged Merchandise", demonstrating how very difficult it is to measure the effectiveness of [usability inspection methods](#). The consensus in the usability community is that the cognitive walkthrough method works well in a variety of settings and applications.

## Walking through the tasks

After the task analysis has been made the participants perform the walkthrough by asking themselves a set of questions for each subtask. Typically four questions are asked:<sup>[1]</sup>

- **Will the user try to achieve the effect that the subtask has?** E.g. Does the user understand that this subtask is needed to reach the user's goal?
- **Will the user notice that the correct action is available?** E.g. is the button visible?
- **Will the user understand that the wanted subtask can be achieved by the action?** E.g. the right button is visible but the user does not understand the text and will therefore not click on it.
- **Does the user get appropriate feedback?** Will the user know that they have done the right thing after performing the action?

By answering the questions for each subtask usability problems will be noticed.

## Common mistakes

In teaching people to use the walkthrough method, Lewis & Rieman have found that there are two common misunderstandings:<sup>[2]</sup>

1. The evaluator doesn't know how to perform the task themselves, so they stumble through the interface trying to discover the correct sequence of actions—and then they evaluate the stumbling process. (The user should identify and perform the **optimal** action sequence.)
2. The walkthrough does not test real users on the system. The walkthrough will often identify many more problems than you would find with a single, unique user in a single test session.

## History

The method was developed in the early nineties by Wharton, et al., and reached a large usability audience when it was published as a chapter in [Jakob Nielsen](#)'s seminal book on usability, "Usability Inspection Methods." The Wharton, et al. method required asking four questions at each step, along with extensive documentation of the analysis. In 2000 there was a resurgence in interest in the method in response to a CHI paper by Spencer who described modifications to the method to make it effective in a real software development setting. Spencer's streamlined method required asking only two questions at each step, and involved creating less documentation. Spencer's paper followed the example set by Rowley, et al. who described the modifications to the method that they made based on their experience applying the methods in their 1992 CHI paper "The Cognitive Jogthrough".

## References

### Further reading

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## External links

- [Cognitive Walkthrough](#)

## See also

- [Cognitive dimensions](#), a framework for identifying and evaluating elements that affect the usability of an interface.
- [Comparison of usability evaluation methods](#)