



ESIP Usability Cluster Monthly Meeting: Heuristic Evaluation and Cognitive Walkthrough

November, 2016

Sophie Hou

National Center for Atmospheric Research



Heuristic Evaluation

- Muniz, Fabio. (2016, May 30). *An Introduction To Heuristic Evaluation*. Retrieved from <http://usabilitygeek.com/heuristic-evaluation-introduction/>
- UsabilityNet. (2006). *Heuristic Evaluation*. Retrieved from <http://usabilitynet.org/tools/expertheuristic.htm>

Heuristic Evaluation

- A Heuristic Evaluation, or Usability Audit, is a usability inspection technique where one or a number of usability experts evaluate the user interface.
- Evaluators measure the usability, efficiency, and effectiveness of the interface against a set of Heuristic Principles.
- The evaluation process generally contains three steps:
 - Planning
 - Running/Executing
 - Reviewing/Reporting



Heuristic Principles for Usability

- 10 Principles were originally defined and presented by Jakob Nielsen in 1994.
 1. Visibility of system status
 2. Match between system and the real world
 3. User control and freedom
 4. Consistency and standards
 5. Error prevention
 6. Recognition rather than recall
 7. Flexibility and efficiency of use
 8. Aesthetic and minimalist design
 9. Help users recognize, diagnose, and recover from errors
 10. Help and documentation

Heuristic Principles for Usability - Continued



- Other lists are also available. For example:
 - Arnie Lund's "[Expert Ratings of Usability Maxims](#)"
 - Bruce Tognazzini's "[First Principles of Interaction Design](#)"
 - Ben Shneiderman's "[Eight Golden Rules of Interface Design](#)"



Cognitive Walkthrough

- Sauro, Jeff. (2011, August 2). *What's The Difference Between A Heuristic Evaluation And A Cognitive Walkthrough?* Retrieved from <http://www.measuringu.com/blog/he-cw.php>
- Usability Body of Knowledge. (N. D.). *Cognitive Walkthrough*. Retrieved from <http://www.usabilitybok.org/cognitive-walkthrough>



Cognitive Walkthrough

- Also a usability inspection technique, but the emphasis is on a series of tasks and asking a set of questions from the perspective of the user.
- Evaluation is focused on understanding the system's learnability for new or infrequent users.
- The process was originally developed more than 20 years ago by Cathleen Wharton, John Rieman, Clayton Lewis, and Peter Polson and has several variations.

General Cognitive Walkthrough Procedure



1. Define the users and their goals.
2. Define the tasks and the corresponding steps that the users would attempt and the criteria for success.
3. Go over the tasks step-by-step through the lens of the user with the actual interface, and ask the following questions:
 - Will the user try to achieve the right effect?
 - Will the user notice that the correct action is available?
 - Will the user associate the correct action with the effect to be achieved?
 - If the correct action is performed, will the user see that progress is being made toward solution of the task?
4. Compare success criteria and the actual steps.