

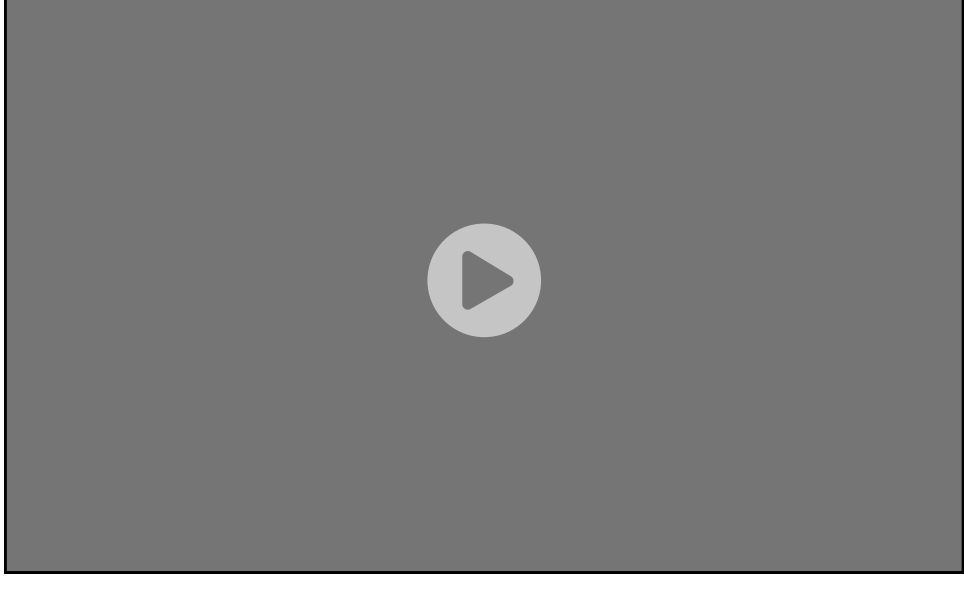
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Heuristic Evaluation

A usability evaluation method in which one or more evaluators compare a software, documentation, or hardware product to a set of usability rules (called heuristics).

Evaluators walk through a set of tasks or scenarios with the user interface to identify where the product follows and does not follow those rules.

Researchers and usability practitioners have developed sets of rules that focus on different user interaction goals. These rules should be considered guidelines for designing the user interface, not standards or requirements.



Recommended Uses

- Identify issues within the system's operational environment of the system when existing designs and/or those of competitors are available.
- Evaluate versions of the user interface at one or more times in the design cycle.

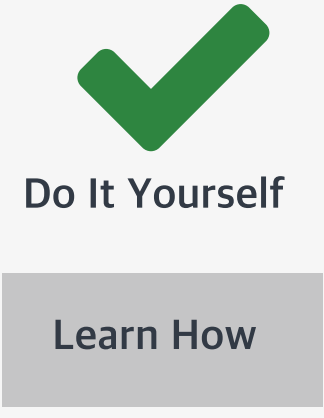
Limitations of this Method

- Does not include interaction with intended users of the product or application, so it may identify issues that are not relevant to the user and may miss issues that impact end user performance.
- Not a substitute for a usability test, as the two methods often uncover different issues.

Outcome

- A list of potential usability problems and the rules they break, typically categorized by severity and illustrated with screenshots.

How to Proceed



Skills and Experience Needed

- With training, non-experts can identify usability problems (Nielsen, 1992)
- A domain expert should assess technical applications or products.

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How to Do the Heuristic Evaluation Method



Introduction



A heuristic evaluation generally involves at least two evaluators. Each evaluator completes their review independently. One evaluator might see problems that the other misses, or they each may have different thresholds for what constitutes an issue.

The set of rules used is the research team's choice — there are options. We strongly recommend using the General Design Principles for EHRs because it was specifically designed with health IT applications in mind.

General Design Principles for EHRs

- 1) Visibility of system status:** Keeps user informed about what is going on.
- 2) Match system to real world:** Uses familiar conceptual models and/or metaphors.
- 3) User control and freedom:** Actions are the result of explicit user inputs.
- 4) Consistency and standards:** Interface expresses the same thing the same way.
- 5) Error prevention:** User confirmation option before committing to action.
- 6) Minimize memory load:** Users see and point rather than remember and type.
- 7) Flexibility and efficiency of use:** Provides simple or advanced functions based on context.
- 8) Aesthetic and minimalist design:** Eliminate extraneous words or graphics.
- 9) Reversible actions:** Provides an obvious way to undo, cancel, and redo actions.
- 10) Help and documentation:** Available, concise, concrete, specific, easy to search.
- 11) Informative feedback:** Tells the user what is going on and what system is doing.
- 12) Good error messages:** Precisely indicates the problem and suggests a solution..
- 13) Clear closure:** Each task has a well-defined beginning and end.
- 14) Use user's language:** Uses the standard meaning of words.

For every step the user is expected to take with the interface, the evaluator must ask whether the step follows or breaks each of these 14 principles. The process will quicken and become more automatic with practice.

In the end, the reviews are merged into one document in a meeting with all evaluators present. All evaluators should get to weigh in on what is included. Although the lead evaluator has final say on disputed issues, the group should strive to arrive at consensus.

Procedure

Foundational Steps (typically the responsibility of the lead evaluator)

- 1) Identify the intended user and the scenario of use.**
Who will use the product and in what context?
- 2) Identify fundamental tasks** that the users must accomplish to make the product successful.
- 3) Ideally, break down the task into the required steps in advance (for example, in a task analysis).**
If this step is not done, the evaluators will need to do this while completing the evaluation.
- 4) Select an instrument**
Pick a template (typically Microsoft Word or PowerPoint), including the rules to be used and the criteria for severity ratings. (Samples provided below.)
- 5) Distribute materials to the evaluators.**

Evaluation Steps

- 1) Walk through the task steps** and for each step make a judgment as to whether a heuristic has been violated.
- 2) When a rule is broken, describe the issue** on a Findings Page.
Also include a:
 - Screen shot of the issue
 - Severity ranking indicating the severity of the issue and its expected impact
 - Recommendation for how to resolve the issue

Compile the Findings

- 1) Meet to discuss each evaluator's findings.**
- 2) Come to consensus** on the quantity and severity of issues, the rules violated, and design recommendations.
- 3) Create a final document** that represents the group's review.
- 4) Deliver to customer and/or to the design team.**

Tools

Below are two templates that can be used to conduct a heuristic evaluation. Both provide supporting documentation and use the same general procedure. Pick one based on the format your team prefers.

- [Word template](#)
- [PowerPoint template](#)

An alternate approach for beginners is to search for usability issues and associate them with a broken rule. Download a cheat sheet that can be printed while conducting your review.

[Heuristics Cheat Sheet PDF](#)
(coming soon)

Similar Methods:

