

Heuristics and Evaluation (Usability and other Aspects of Project Evaluation)

What is Heuristics?

A heuristic is a mental shortcut that allows people to solve problems and to make judgments quickly and efficiently. These rule-of-thumb strategies shorten decision-making time and allow people to function without constantly stopping to think about the next course of action.

From the Psychology Dictionary

http://psychology.about.com/od/glossaryfromatoz/Dictionary_Psychology_Terms_from_A_to_Z.htm

Heuristics and Usability

Is the practice of reviewing, evaluating, or judging the compliance of the website or material with recognized usability principles.

“Heuristics and testing is an important part of your Website development process. Usability tests gather data about the usability of your site by a group of users performing specific tasks.” (Dannie, 2001)

Permission to share from Sitepoint <http://www.sitepoint.com/heuristic-evaluation-guide/> and Nicky Danino Senior Lecturer at the University of Central Lancashire.

What is Heuristic Evaluation?

Heuristic Evaluation (originally proposed by Nielsen and Moloch, 1990) is an efficient method for quick, cheap, and easy evaluation of the user interface.

The process requires that a small set of testers (or “evaluators”) examine the interface, and judge its compliance with recognized usability principles (the “heuristics”). The goal is the identification of any usability issues so that they can be addressed as part of an iterative design process.

Heuristic Evaluation is popular in Web development circles because it requires few resources in terms of money, time or expertise. So any developer can enjoy the benefits of usability testing – not just those with thousands to spend on a professional assessment. Williams and Tollett (2006) recommend 5 testers for every project/product.

Heuristic Evaluation is characterized by:



- Small test scenarios that use paper mock-ups or screen shots, which can easily be changed from one test situation to the next
- An informal basis for assessment that doesn't require psychologists
- A high success rate – so only a handful of testers are needed
- A few key guidelines

How Can I Use Heuristic Evaluation on my Site?

Plan Your Usability Evaluation

How will you test your interface?

Heuristic Evaluation typically employs one of the three main approaches:

1. Develop a set of tasks and ask your evaluators to carry them out.
2. Provide evaluators with the goals of the system, and allow them to develop their own tasks.
3. Ask evaluators to assess your dialogue elements.

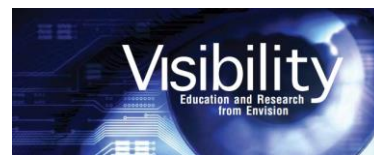
Heuristic Elements in Web Design: 10 Elements of Review

Also referenced (Ssemugabi, Dissertation, 2006)

1. Visibility of System Status

Probably the two most important things that site visitors need to know are:

- “Where am I?” and
- “Where can I go next?”



So it's essential that your interface keep users informed about what's going on. To test this, your evaluators should look for appropriate feedback within a reasonable time following each user interaction.



2. A Match Between the System and the Real World

The system should speak the users' language, using words, phrases and concepts that are familiar to the user, rather than system-oriented terms. Even though you might use what is considered standard jargon for the topic on which your site focuses, consider including a further simplification or explanation of the words you've used.

Your evaluators should make sure you've followed real-world conventions, and that your information appears in a natural and logical order. A real world concept applied on the Web is the shopping cart. On many sites, you click once to select an item (the equivalent of picking it up off the shelf in a real store), click again to "add to basket" (or place it in your trolley) and then a third time to confirm your intention to buy (or move to the checkout).

3. User Control and Freedom



Site visitors often choose system functions by mistake, and will need a clearly marked "emergency exit" to leave the unwanted page without having to go through an extended dialogue. While there's a definite need for order to exist in your site, a greater degree of user control may be required to cater to the needs of more experienced users.

Your evaluators should ensure that your site meets the control requirements of both first-time and experienced users. An example of a control element might be a "home" button that appears on every page. It's a simple way to let users feel in control of the system – they know they can "go home" (or opt-out) at any stage in the process.



<http://whywebstandards.org/>

4. Consistency and Standards

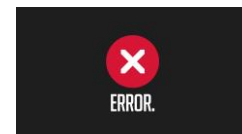
Users should not have to wonder whether different words, situations, or actions mean the same thing. It's best

to follow the uniform and/or platform conventions to which your users are accustomed.

If the user wants to return to the main page then label your link "Home" or "Homepage", rather than some obscure reference.

5. Error Prevention

Even better than good error messages is a careful design that prevents a problem from occurring in the first place.



The best way to avoid errors is to conduct testing, more testing, and even more testing. However, if errors do occur, try to provide user-friendly messages in natural language rather than code.

6. Recognition Rather than Recall



Make sure objects, actions, and options are highly visible. Your site visitors shouldn't have to remember information between different parts of their dialogue with your site. Instructions for use of the system should be visible – or at least easily retrievable – whenever your users need them. This increases the chance that your visitors will be able to recognize where they are, so they won't have to retrace their path from the home page.

For example, if you create a Website with a lot of submenus, then use a system that will let the users know what section they are in at all times. You could do this by leaving a breadcrumb trail, or maybe applying a color scheme that differentiates the various sections.

7. Flexibility and Ease of Use

Accelerators, which may be unseen by the novice user, can often speed up the interaction for the expert user, and allow the system to cater to both types of visitors. You might, for instance, allow users to tailor frequent actions.



Take Amazon. They save the personal information that's provided by customers upon purchase. Then, each time the customer makes another purchase, they can retrieve their information with a single click. In this way, Amazon provides customers with a way to avoid filling in an extensive form each time they buy a product at the store.

8. Aesthetic and Minimalist Design

Minimalist

DESIGNS FROM AROUND THE WEB

Extraneous information on a page is a distraction and a slow-down. Make rarely needed information accessible via a link so that the details are available, but don't interfere with the more relevant content.

If your "Contact Us" page contains a form, as well as all your physical contact details such as address, telephone number etc., there's no need to also include a map with extensive instructions on how to get to your premises. Instead, this can be provided on a linked but separate page – not everyone who fills out the contact form will wish to see the map every time they visit the page.

9. Help Users Recognize, Diagnose, and Recover from Errors



Errors will occur despite all your efforts to prevent them. Your error messages should be expressed in plain language with no codes or jargon. They should detail the problem, and constructively suggest a solution.

For example, if a form is completed incorrectly, your error message should alert your visitor to this, identify which fields will need to be refilled, and perhaps highlight those fields when the user returns to complete the form after they dismiss the error message.

10. Help and Documentation

Ideally, every online system could be used without documentation, however, it may be necessary to provide help and documentation to cater to the needs of all users, and be on the safe side.



Your evaluators should check to make sure that help and other documentation:

- Is easy to search
- Focuses on the user's task
- Lists the concrete steps users need to carry out to achieve their goals
- Isn't too large

Often, documentation is fully integrated into a Website. There should be links from the main help sections into specific subsections, and vice versa. Help could even be fully integrated into each page so that users never feel like assistance is too far away.

Conducting the Evaluation

Conduct the evaluation using either of these methods:

- Individual Evaluation – each evaluator reviews the interface individually and reports problems to you. Individual evaluation is easily conducted over the Internet. It will pick up more problems than group evaluation, but takes a lot more time to complete.
- Group Evaluation - evaluators review the interface as a team, while you record the problems. Evaluators do not have to agree on a problem – but every issue they identify should be recorded. Group evaluation requires more planning than does individual evaluation, as all evaluators need to be assembled, however, the evaluation need only be conducted once as all the evaluators can complete their tasks at the same time.

The most basic form of evaluation is to choose a random page from your site and see if your evaluators can:

- Tell where they are
- Tell what they can/should do next

5. Analyzing your Results

Once your evaluators have:

- Worked their way through the tasks or goals you set,
- Evaluated each of these in light of the ten heuristics, and
- Provided their feedback,

You'll need to compile all the information. Remove any duplicates and combine similar issues. What's left will be a set of problems or comments that you can address to improve your site's usability.

Remember the Golden Rule!

The golden rule of usability is:

There's no such thing as a "user error"!

Make sure you clarify every problem your evaluators identify – ask questions so that you understand the specific nature of the difficulties they encountered. And remember:

- Don't argue with your evaluators,
- Don't try to “explain away” problems they identified

If an evaluator found an aspect of your site confusing, then it's more than likely that your Website visitors might have problems with it too.

Additional References/Resources

Google Tools and Forms

http://google.about.com/od/toolsfortheoffice/ss/forms_google.doc.htm

My eCoach Survey Tool

<http://www.my-ecoach.com>

http://my-ecoach.com/blogs.php?action=view_post&blog=399&post=24535

Williams, R., & Tollett, J. (2006). *The non-designer's Web book : an easy guide to creating, designing, and posting your own Web site*. Berkeley, CA: Peachpit Press.

Why You Only Need to Test with 5 Users

<http://www.nngroup.com/articles/why-you-only-need-to-test-with-5-users/>