

Usability in Less Than 60 Minutes

This fifty minute class is an introduction to usability and user-centered design. Answers to the following questions will be outlined:

- What is usability?
- What is user-centered design?
- What is usability testing?

What is usability?

Usability denotes the capacity to accomplish goals and tasks through the quick, effective, and easy employment of tools. The term is often used when describing websites, but it can just as easily be used to describe the characteristics of anything such as a toaster, video cassette player, automobile, or hammer.

The concept of usability assumes the use of very few things is intuitive. For example, how would you know how to use a pencil or hold it efficiently if you were not taught? How would you know one end of a pencil needs sharpening before it is used? Once it was sharpened how would you know the thing at the other end is intended to remove marks made with the first end? Pencils are not inherently usable. Fortunately, once you've learned how to use one pencil it is pretty easy to figure out how to use another one.

Websites, unfortunately, are not like pencils because not all websites are the same. In fact, differences between websites is the norm and expected. The technology used to create websites is similar from site to site to site, but the way the technology is manifested is different. This causes usability problems. People must habitually learn how to use each new site order to accomplish the site's and the people's intended goals. An understanding of usability issues, specifically user-centered design and usability testing, can reduce the amount of necessary learning. They can help remove the barriers to creating and maintaining usable and informative websites.

Usability goes beyond functionality. A tool may be functional but not very usable. Take for example the handi-dandy Visegrip®. This all-purpose tool was once billed as a thing that could be used as a hammer, a screw driver, a wedge, a saw, etc. In reality, Visegrips are simply very fancy pliers. A website may very well provide the most wonderful technology and whizbang features to read and organize, say,

news stories, but if the website requires a lot of specialized knowledge or if the interface is confusing, then people won't use it and the purpose of the site is defeated. Usable websites are websites that have overcome these problems.

What is user-centered design?

User-centered design denotes the creation of things (i.e. websites) from the intended audiences' point-of-view. Conversely, it means the people using a website do not have to understand the norms and organizational structure of the site's hosting institution in order to employ the site's functionality. User-centered design grounds its presentation on the audience's perspective and not necessarily the perspective of the designer.

The key to good user-centered design is concretely defining the website's intended audience and understanding their needs and desires. Who are the people who will be using the website? What are some of their demographic characteristics: age, gender, educational level, financial status, technical expertise, socio-political background, residential location, etc. Just as important but more difficultly understood is the need to know the intended audience's expectations. What do they want out of the website, how much effort are they willing to spend, and how motivated are they to get it? Interviews with individuals representing the intended audience are a good way of learning people's needs and desires. After addressing these issues it should be possible to create "personas" representing fictitious individuals from the intended audience. These personas include the individuals' names, addresses, a short biography, and quite possibly a photograph of the individual. Hang these personas on the wall as reminders of who the website serves.

Most often good user-centered design manifests itself in effective labeling and a simple, consistent, and informative graphic design. Effectively labeling means using the vocabulary of the intended audience to communicate the website's features. Hyperlink terms and phrases that have meaning to the website's personas. Don't say, "Submit a query to the index" when "Search this site" makes more sense. Don't label something as "JPEG images" when "pictures" will work just fine.

Additionally, most websites are intended to be practical and informative. Therefore don't treat a website's design as if it were a part of an art show or an interpretive dance. On the Web, "content is king",

and a site's graphic design should be functional, explicit, elegant in the mathematical sense, and similar from subsite to subsite. Designs exhibiting these characteristics will be easy to learn, easy to use, and informative. The audience's experience garnered from one subsite will be easily applied to other subsites making the entire experience more effective and productive – more usable.

What is usability testing?

Usability testing is a systematic technique for observing how an intended audience uses a website. The process can be quite simple or highly complex, but the goal is the same – to learn how users use a site through direct observation. Each website has some sort of goal, a set of tasks it is suppose to enable a person to accomplish. If the intended audience is not able to accomplish the tasks, then the website is unusable. Usability testing is a method for discovering these problems.

The first step in usability testing is the articulation of a website's goals and the tasks it is suppose to enable. For example, a site might enable a person to purchase a book, read a weather report, download a software program, play a game of Scrabble®, or compare and contrast used cars. Verbalize a list of these goals/tasks, and write them down. An example might include, "A person using our website should be able to locate and purchase a book of a known title in less than ten minutes." Concurrently, use the principles of user-centered design to begin the creation of the website but do not finish.

As various milestones in the creation process are reached get user feedback. Identify individuals from the intended audience, and ask them to participate in a usability test. (It is a good idea to provide some sort of compensation for these people's time.) Sit each one of them down in front of the computer, give them the slightest bit of background, and ask them to accomplish one or more of the articulated tasks. Meanwhile, observe their behavior, record it, and be as careful as possible to not influence their actions. At the end of each test ask each participant for their feedback. Repeat this process eight to ten times per milestone.

At the end of each testing cycle a set of user observations will have been gathered. Evaluate these observations, consider them very seriously, and continue the website creation process constantly keeping the observations in mind. Because of the wide diversity of people's experience, it is unrealistic

to believe 100% of your intended audience will be able to accomplish 100% of your site's goals/tasks. Therefore it is important to define an acceptable accomplishment standard such as "Eighty percent (80%) of the intended audience are able to achieve the website's goals/tasks." When all the website's goals/tasks have been functionally implemented and the accomplishment standards have been reached the usability testing process is complete. Consider the website done, for now.

Summary

The incorporation of usability techniques, specifically user-centered design and usability testing, into the website creation and maintenance process will result in websites that are more effective, easy-to-use, and make a positive impression on its intended audience.

Further reading

1. *Designing Web Sites That Work: Usability for the Web* by Tom Brinck, Darren Gergle, and Scott D. Wood. Morgan Kaufmann Publishers: San Francisco, 2002.

The authors of this book coin the phrase "Pervasive Usability", a phrase used to describe "a development process that addresses usability issues throughout the [website's] development lifecycle." Not only does this book detail a technique for creating websites, but it does it keeping the ideas of usability central throughout the process.

2. Usable Web by Keith Instone (<http://usableweb.com/>).

While Jakob Nielsen's website (<http://www.useit.com/>) is much more familiar to usability experts, Instone links to well over a thousand usability-related sites and consequently it is a good place to continue learning about usability issues.

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