



**ICONLOGIC**  
Learning Series

# Human-Computer Interaction

In This Module You Will Learn About

- The History of Human-Computer Interaction (HCI)
- Affordance
- HCI on the Internet
- HCI and Help Systems
- HCI and Captivate Projects
- On-line Meetings and Distance Learning



# The History of Human-Computer Interaction

The dawn of personal computing in the early 1980s was the beginning of a rapidly evolving technology stranglehold on everyday life. The mechanical world of typewriters, dedicated word processors and adding machines with cranks were quickly left in a wake of microchips.

The good news: *you could do more.* The bad news: *you can be caught in a mire of complex and often-confusing computer-based equipment.*

The study of Human-Computer Interaction (HCI) finally took center stage in the mid-1990s as the World Wide Web, e-mail, and Windows 95 burst upon the scene.

Over the years, computers and programs have become easier to use. Computer programs have become more user friendly, taking advantage of “point and click” design. Minimal mouse clicks are only part of the picture to improve the computing experience. Cleaner, less cluttered “work spaces” for software are the heart of HCI. Users can focus on the tasks at hand (i.e., doing whatever it is they want to do with computers without worrying about how to “make things work”).

HCI was a major factor at the Xerox Park Research Project in the late 1970s, even if the people involved weren't quite sure initially what HCI was (or the monumental impact it would ultimately have). Those researchers made pioneering efforts studying how people interacted with technology. They then redesigned software (and computers) to improve the “computing experience,” boosting productivity. Mouse technology and “desktops” with icons (primitive as they were compared to today's standards) made it easier for people to work with technology that was soon to change the computing landscape of our daily lives in the 1980s.



## What is HCI?

HCI has to do with the space that is created for you to work with technology. I'm not talking about space in the traditional sense of "floor space." I'm referring to the space that envelops you the minute you start concentrating. That space is what you become "submerged" in when you interact with a computer (or any kind of technological device you need to control).

Think about all those flashing "12:00" digits on VCRs when they became a part of our lives in the 1980s. People quickly figured out how to press the red record button on the VCR to record a program "on the fly." But it was a much different story when it came to performing such tasks as programming the VCR and setting channels. The typical reason for the futility many people felt while trying to use a VCR was confusing or poorly written instructions.

The same is true for digital watches. Setting (or turning off) an alarm on a digital watch can be difficult. And, it really all comes back to HCI. The steps to accomplish tasks with electronic equipment have become more intuitive, because the designers of the products now look very closely at HCI and the space they are creating for you to work in.

Problems setting VCRs and digital watches are only a small part of the picture. Even today, people don't use many of the features on their cell phones or answering machines. The reason is that they just can't figure out what to do. After just a few attempts a person usually gives up on taking advantage of the "bells and whistles" that sounded great at first.



## Affordance

Affordance is the essence of HCI. Simply put, affordance is the know how and skill set you bring to any new situation. *Here's an example of affordance:* You rent a car. Even though the car is a model you have never driven, when you climb into the rental car you already know how to press the button to roll down the electric window. However, the affordance you “bring to the table” in such a situation isn't going to do you much good if, instead of pressing down on the button, you need to pull up on the button to make the window work. *Here's another example:* There's a very good reason that most rental car companies do not offer cars with manual transmissions. Anyone who has a license has the skill necessary to drive a car with an automatic transmission. But your driving skills would do you no good if you couldn't use a clutch or shift.

Therein lies the conundrum for HCI. Because there is no one specific standard way to create products, there is no magic way to create user-centered design. The goal that HCI achieves is to create something the user can work with successfully. A person must be able to work within an interface (or space) intuitively. Affordance is something you keep adding to over time.

You have most likely interacted with technology in positive and negative ways. A good experience, where you can accomplish what needs to be done with minimal heartache, isn't something that can be listed in “10 easy steps” for product design. The evolving study of HCI is the major force leading to a better working experience in those technology spaces you inhabit daily.

## HCI on the Internet

The Internet is riddled with great, as well as bad examples of HCI. When you visit a Web site where it is easy to find your way around and seemingly effortless to accomplish tasks, you are experiencing a good example of HCI. The United States Postal Service's web site (<http://www.usps.com>) is one of the single-best models for HCI. When you visit that Web site, you'll quickly discover that everything seems to be in the right place. Of course, you could easily put together a list of Web sites that are bad examples of HCI. I'd recommend you visit <http://www.websitethatsuck.com> to see a regularly updated list of spaces that don't even come close to successful HCI.



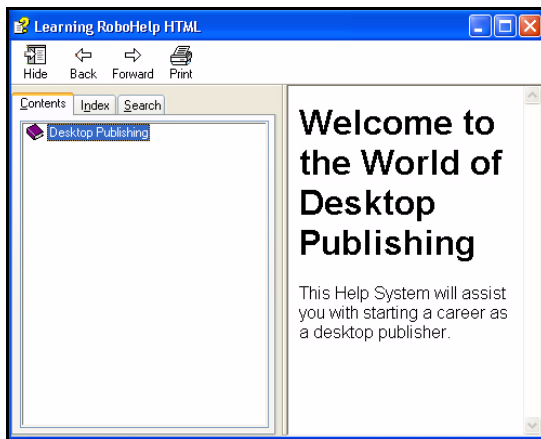


## HCI and Help Systems

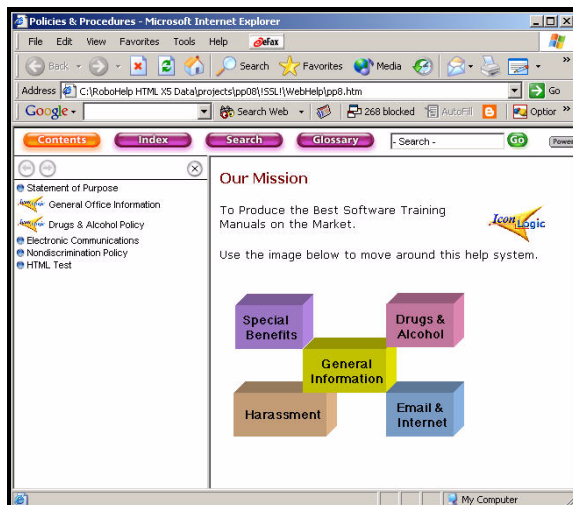
There is no way your affordance can completely prepare you for functioning in today's technology-based world. The more you work with technology, the better you will get at "figuring things out." However, to maximize your potential, you need access to information about the technology.

Although there are many vehicles you can use to convey information, a Help system is a popular choice. Simply put, a Help system allows a user to focus on working with a program without being burdened or lost when it comes to finding answers. There are different types of Help systems, but the three most popular are **HTML Help**, **WebHelp** and **FlashHelp**.

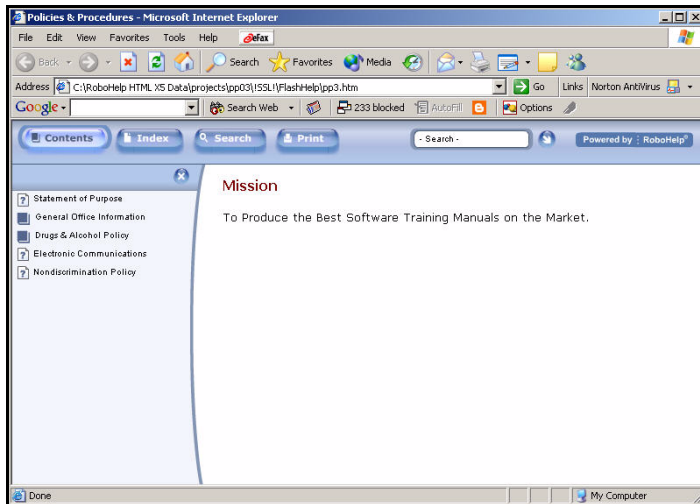
*Pictured below is an example of HTML Help. These kind of systems are ideal for PC users who have Internet Explorer 4.0 (or newer) and Windows 95 (or newer). You have limited control over how the overall Help system looks.*



**WebHelp** systems (pictured below) are ideal Help systems if you have cross-platform users (Macintosh, PC or UNIX-based computers). You can completely customize the look of a WebHelp system.



FlashHelp system's (pictured below) are similar to WebHelp but feature more dynamic animation effects.



HTML Help, WebHelp and FlashHelp systems *can* contain a Table of Contents, Search, Index and Glossary tab. Any of these tabs can be set to be the *default* tab (the tab that appears by itself when the Help system starts). The Table of Contents tab typically contains books and topics conveniently listed in a point-and-click format. While easy to use, the structure of the Table of Contents is dependent on the thought process of the Help author. As a result, finding information in the Table of Contents is not likely to be intuitive. The user would have to know what the Help author was thinking when the author created the Table of Contents.

Most users quickly discover that the Table of Contents, while nicely structured, does not allow a user to find information quickly. Instead, users tend to spend more time on the Index tab where users find an alphabetical list of keywords. The user can type a keyword and, if the keyword is part of the Help system, the user is presented with associated topics. Of course, one drawback to the Index is that a user would have to know which keyword to type to use the Index effectively. The Search tab, on the other hand, allows a user to find any word in any topic simply by typing the word and clicking “Search.” For these reasons, a Help system that uses either the Index or Search tab as the default, instead of the Table of Contents, would be an example of good HCI.

**Note:** Help systems are typically created with one of two programs: Flare or RoboHelp. You can learn more about Flare by visiting [www.madcapsoftware.com](http://www.madcapsoftware.com); RoboHelp by visiting [www.adobe.com](http://www.adobe.com).



## HCI and Captivate Projects

When it comes to computers and technology, people tend to learn better “by doing.” That’s why most professional training companies offer any, or all, of the following: certified trainers, one computer per learner, step-by-step learning books, and computer-based simulations.

During this book you will learn to use Captivate to create computer-based simulations. When creating your simulations, keep in mind that for each task to be accomplished, it is best to first explain what will be done and the impact it will have. Your simulations will need to make clear exactly what is going to be achieved and how that fits into the overall picture for the knowledge-base the user hopes to gain. Knowing this kind of information will make it much easier for the learner to understand, follow and complete the simulation.

Here’s an example of employing HCI with your finished projects: Your projects can contain a playbar that the user can use to stop, pause and move through your project. As the developer, you will have limited control over what tools the playbar will contain and where the playbar will appear on the users screen. For instance, the playbar can be forced to appear in the upper left, top center, upper right, bottom left, bottom center or bottom right of the project. Once you establish the playbar’s position, users will not be able to hide it, edit it or move it. For that reason, the appearance and position of the playbar is critical, yet often overlooked.

Most people who use your projects will first look in the upper left portion of a window. This area of the window is known as the “hot spot.” In newspaper publishing, the upper left part of a page is often reserved for the most important news items. Positioning the playbar can be a tough decision. Should you position the playbar in the upper left, or would that be a distraction? How about positioning the playbar in the bottom center of the user’s window. That’s not a bad idea until you hear from users that they didn’t know there was a playbar because it was too far down the page. Unless it would be blocking important screen elements, I recommend placing the playbar in the **upper right** of the project. In my experience, this kind of positioning garners the most favorable reviews.

The bottom line where your projects are concerned is that you should create your projects with HCI in mind. If you do, your projects will build on what the user already knows and your projects will add to the success a person will have when working with technology—new and old.

# On-line Meetings and Distance Learning



HCI has become a major factor in computer-based training and on-line meetings for corporations and government organizations.

Corporate employees can “attend” meetings anywhere in the world by taking advantage of electronic (on-line) meetings. The HCI aspects of such meetings build on the user’s skills of knowing how to use a computer and software (the affordance factor). Electronic meetings allow users to view documents on-line, which is an ingrained skill for anyone who regularly uses a computer. Add to that video and sound and you allow meeting attendees to interact in much the same way they would if everyone were actually in the room.

Learners can now take classes and be part of workshops without leaving home. Known as distance learning, these kinds of courses have great impact in rural and geographically diverse areas. HCI manifests itself in distance learning via tools such as instant messenger and e-mail that allow learners and trainers to exchange information rapidly. Most learners begin a class knowing how to type on a keyboard. Creating e-mails and sending instant messages is simply adding to the learner’s affordance.

Electronic classrooms also allow homework assignments, as well as tests and certifications, to be more easily distributed and processed. Additionally, the tutorials and training aids to prepare for such testing can be handled effortlessly and effectively.

The success of electronic meetings and learning has come from HCI being interwoven into goals, planning, development and implementation. By building on skills learners already have, electronic meetings and classrooms have become productive tools for corporations and education institutions.

The more aware you become of HCI, the better you will be at using, learning and training people to use technology. For more information about HCI, visit [www.hcibib.org](http://www.hcibib.org) or [www-pcd.stanford.edu/hci.html](http://www-pcd.stanford.edu/hci.html).

