The Design of Everyday Things

By Don Norman

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When it comes to items we see on a daily basis, the design of an object makes an impact on the user’s experience. If it is built well and is easy for the user to complete their task, they barely have to think about the process they go through to make it happen. But when the design of an object is difficult to understand, then it becomes a chore for the user to try to find what they are looking for and they will eventually give up. Many companies today design their items with innovation and style as the main priority, instead of practicality and usability. In the book “The Design of Everyday Things” the author Don Norman discusses the importance of developers incorporating the human aspect of their user’s experience into their designs to understand how they will react to specific elements they encounter

The first aspect of design that the author discusses is discoverability which makes it possible for a person to figure out what actions can be achieved with the design and how to perform them. This logically helps the user understand how the item is supposed to be used and what are the meanings of the given controls of the item. In discoverability, there are six main steps in the user experiences. The first step is affordance which refers to the user’s relationship with an object, and the properties of the object that help the user determine how the object could be used. The next is signifiers which refers to any indicator to how the item is operated, whether it’s a visual or audio que that instructs the person’s behavior. The third is constraints which refers to an indicator that notes when the user preformed the wrong action such us a drawer not opening. Next is mapping which refers to the relationship between the components of an item. The fifth step is feedback which refers to the results of the user’s actions. Finally, the last step is the conceptual model which provides true understanding to the user and is a highly specific and simplified explanation of the function of a specific item. Continuing with promoting user understanding, the author explains that it is important for the developer to convey the instructions clearly to the user and show them what actions are possible with the given item, whether it be directly through written instructions or indirectly through images or the item itself. A simplified example of this is the case of using a basic door. The designer needs to either have a push/pull sign on the side of the door that can be moved, or have a feature like a plate or hinges on the immovable side of the door to indicate what to do

The next topic that Mr. Norman discusses in his book is how understanding human psychology can help designers build items that are easy for the user to comprehend, as well as how to make the given items more appealing. When a person is faced with a task or item, they are faced with two gulfs. The first is the gulf of execution which refers to the user trying to figure out how the item operates, with an example being the basic door and when a user sees a handle they immediately think to pull it. The second gulf is the gulf of evolution which refers to the amount of effort a person needs to make in interpreting. An example of this is if the user pulls the handle of a drawer and it opens then the user was successful, but if it does not open then the user will either look for other directions or give up if the task gets too complicated. The next concept the author discusses is the seven rules of action. In this, the *goal* refers to what outcome the user wants, the *plan* which refers to how the user will achieve this goal, *specify* which refers to narrowing the options of the plan, *perform* which refers to physically preforming the intended task, *pensive* which refers to evaluating the object or situation again, *interpret* which refers to seeing if the action had the desired result, and *compare* which refers to comparing the object or situation before and after to see if the user is satisfied or not. Finally, in regards to human psychology, Mr. Norman talks about the three different levels of processing. These include the visceral level which is the most basic and animalistic part of the human brain and is responsible for our subconscious responses to things like safety or danger. The second level is behavorial, which refers to the level where behaviors and skills are learned through patterns in a situation. Finally, the reflective level is where conscious decision-making happens, reflects on different events that take place, and devising a plan to respond to those events.

After considering the different aspects of human psychology that the designer must consider when designing an object, the author then talks about the different constraints the user faces when observing an object. The first type of constraint is the physical constraint which refers to the physical space around the object as well as the size and dimensions of the object itself. An example of this is the size of the battery compartment of a device, which will tell you what size battery it needs and which side of the battery should go where. The next constraint is cultural constraints which refers to the actions or images of a culture or social situation, and how in one culture they are normal while in others they are foreign or inappropriate. Another constraint is semantic constraint which refers to the specific meaning of a given situation. An example of this is a Lego set where the motorcycle is meant to have the rider on top facing forward. Finally, there is logical which refers to the situation the user finds themselves in when determining their course of action. For example, the user has connected all the pieces of the Lego set together and only the lights for the police bike remain. The user then knows their next step and where the final piece goes. The author explains that constraints are not just situational, they can be put in place by the developer to guide the user’s actions. Examples of this include an interlock which guides users to take proper steps or be in the proper location before the sequence can be complete. Like starting a car, the user needs the key to tell the car to start, and they need to either press the button or insert the key to turn the ignition on. These steps prevents the miss use of an object. Another constraint is lock-ins, which keeps a user active and prevents them from prematurely exiting. This helps when computer applications will not save what the user wrote down if they abruptly leave the application. Finally, there are lock-outs which prevent the user from entering until a specific task is complete. This is used mainly for the safety of the user, similar to the pin on a fire extinguisher.

Now that the designer understands the different constraints they may face or have to induce during the design of an object, Mr. Norman explains how to consult with a user about their difficulties. When consulting with a user about their problems and creating a solution, the problem they report is not always the source of the barrier. It is important for the designer to ask the user about specific details and situations to determine the actual issue at hand using the five whys. For example, if there is a plane crash, the developer would ask why the plane crashed, why did the pilot lose control, why was he in that situation, etc. Once the designer knows how to properly define the problem the user is facing, there are two design methods they could use. The first is the double diamond method which involves questioning the problem and expanding the scope of the problem to examine all fundamental issues underneath. After, the developer deduces the problems until a single problem or point is reached. Using the same method, the developer has one solution then expands it to all possible solutions before deducing them back down to a single solution. Another method the designer could use is the human-centered design process, which consists of observing or researching the main users of the object and their activities. This approach focuses on the main problem, then generates ideas by gathering the research about the specific users and comes up with solutions. There is the creation of as many solutions as possible, and creativity is encouraged without regard for constraints. This approach questions everything. The third is to build a small mock up out of carboard or pen and paper. Finally, the developers will test with small groups of people who have been proven to be the intended user and having them test the prototype while the research team observe the subjects and get their thought process of the designs to see if there can be improvements.

In conclusion, the author explains that when it comes to making objects for people to use, whether it be a door, a Lego set, a light switch, or a washing machine, Mr. Norman relays the importance for designers to understand their users. This is done through a process when faced with a specific object and how the user navigates the item. He explains that developers must understand the users conscious and subconscious reaction to an item and if they are able to achieve their task or not. The author continues by explaining the different constraints the developer will face when creating a design, as well as what constraints they will need to implement to guide the user. Finally, the author demonstrates two different methods of how to fix a user’s problem, even when the problem may not always be the root issue.

References

Norman.D(1988) “The Design of Everyday Things”(1st ed) Nornam