Assignment 1: "Bad Design" Report

Eugene O. Casmin - 2528933 [1]

Resumen— **Bad design is one of the key hindrances to proper and seamless human-machine interaction in the daily lives of respective users. This report explores one such case with the example of a Bompani Home Oven Cooker.**

Palabras clave— **human-computer interaction, bad design.**

I. Introduction - Identification of design flaw

A home cooker/oven is one of the most important tools in any kitchen. As such, it is imperative that the device is as simple to use as possible. This is because at times the persons employed to work in the kitchen may not have the knowledge required to handle complex machinery and/or the literacy level required to read and interpret the user manual. Furthermore, the aforementioned user manual is likely to be written in a language that is foreign to the buyers'.

The figure below shows the Bompani Home Cooker's oven knob that is the subject of this report.

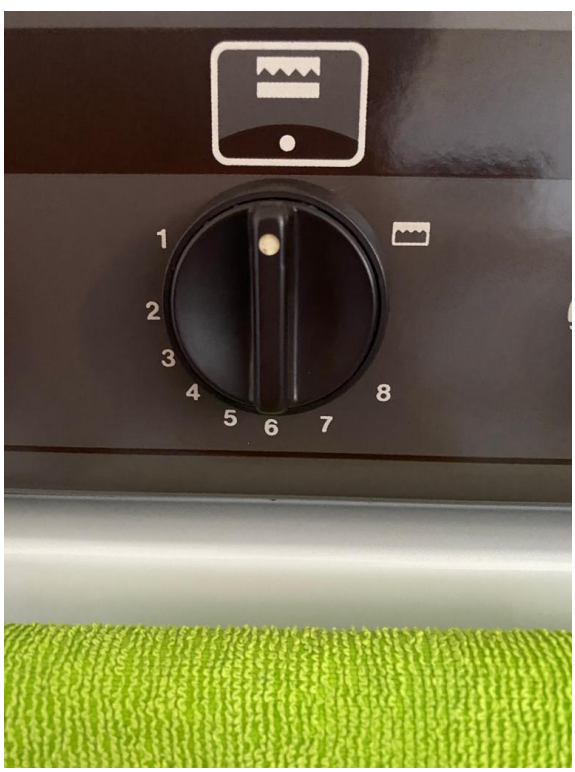

Fig. 1. Bompani Home Cooker oven knob.

As can be seen from the figure, the following design flaws can be identified:

- How to turn on the oven; The interface provided for use does not avail enough information to let the user know what to do to light the oven. The image on top of the knob, for instance, is not clear whether the flame/heat comes from the top or the bottom part of the oven.
  The procedure for lighting the oven is to push the knob inward and turn it counter-clockwise, while holding a lighter toward the gas outlet inside the oven (at the bottom of the oven). From there, one has to pretty much guess the temperature or use an external home-use thermometer :(. This clearly should not be the case.
- Temperature calibration; The interface provided does not provide any indication of the temperature units; nor does it avail any information about the calibration i.e., what temperature value does "1" correspond to? what is the temperature jump between the values?

II. Problem Definition - Discussion of design flaw

In this section, we will present the case for the bad design of this knob based on each of the usability concepts covered in [1]. Under each concept, we will discuss whether or not the design adheres to the standard expected of a good design.

1. Affordances; The design of the knob clearly makes the usage obvious based on the appearance. It is easy to see and/or feel (in the case of visually impaired users?) what the user is expected to do when using the knob; either turn it clockwise or counter-clockwise. Additionally, upon holding the knob, the user can feel that there is a provision for pushing it inward.
2. Visibility; The knob has a white dot to indicate the temperature level chosen for the oven or indeed, whether or not it has been lit. By looking at the knob, one can know the state of the oven, albeit not the exact temperature value as has been discussed.
3. Conceptual models; A good conceptual model should allow the user to simulate the usage of the device or predict the outcome of their actions. From instantaneous view of the knob, one cannot know exactly what is expected of them besides turning the knob to alter the temperature. This is therefore a bad design because there is difficulty in simulating the procedure described in the preceding section to light the oven.
4. Mapping; The knob is at the center of the row of knobs on the cooker. One may use elimination method to discern that this is the knob used for the oven since it does not have the mapping icons used to show the corresponding burner.

[1]Computer Engineering Dept., METU NCC, e-mail: eugene.owilla@metu.edu.tr

However, this effort on the part of the user may also be perceived as bad design since the icon on the knob is still vague.

5. Feedback; Besides the gas outlet releasing the LPG from the cylinder (which is very hazardous) or the user consequently lighting the oven, the cooker does not offer much feedback to let the user know that they are performing the correct action.
6. Constraints; As discussed under the "affordances" concept, the knob design does well in constraining the array of actions that the user can perform. For instance, the calibrations are finite and not all around the knob. This is an indication that the degree to which the knob can be turned is limited/constrained.

Referencias

[1] *CNG 2542 Human-Computer Interaction Fall 2021 lecture slides - Interaction*, Yeliz Yesilada.