# Universal Principles – Lamp Design

## The Device

While travelling with a friend, I stayed in a motel in Los Angles. This motel had a desk light beside each bed. The design of this light is common and one that you would expect to see. It had a round flat base, a narrow bendable pole to allow the user to reposition the light, and a half sphere dome on the top from which the light would emit.

We arrived after dark, and so only had the soft light from the bulb in the centre of the room for illumination. To brighten the room we walked to the lamps beside the beds to turn them on. However, neither of us could figure out how to turn the lamps on. There was no switches to flick, no cords to pull, nor any buttons to press. We checked the power cords were plugged in, and that the cords switch was turned on. It was only blind luck that we stumbled across the answer. To turn on these lamps required a touch on the dome at the front. To further confuse things, these lamps started out very dull on the first touch. They required multiple touches to bring it to full brightness. Also, one touch too many and the light turned off again.

## Universal Principles

This lamp design breaks several universal principles.

Firstly, it has poor visibility. I knew it was a lamp, and would emit light once turned on. It did not give me any clue as to how to turn it on. The point of touch on the dome to turn on the light, looked exactly the same as the rest of the dome. This lack of visibility make using the device difficult and caused frustration. The lamp also had poor visibility when it came to changing the brightness. It was not clear that repeated taps were necessary to control the brightness and, eventually, to turn the lamp off.

Secondly, this design had poor constraints. There was no physical, or visual feedback (other than the lamp brightness) as to which of the available settings the lamp was on. This meant that the lamp could be inadvertently turned off when trying to increase brightness. The five increments of brightness were not large enough to be distinct. Thus, it was necessary to tap slowly when turning the lamp off, as it was easy to tap too many times and turn it back on again.

The design of this lamp also violated my pre-existing cognitive model of how lamps operate. The lamps I have used have always had a switch, button, or cord. My logical mapping tells me that when I use any of those modalities the light will come on at the top of the lamp. Without one of those modalities, and without any other clear visual indicator, it was not clear how to operate the device. There could also be an element of cultural mapping, if touch lamps are more common in America.

## Improved Design

The lamp in question had a nice design from a visual perspective. It looked modern and classy. It is possible to rid this lamp of its design flaws without changing the original design.

All this lamp would require is to slightly alter the touch area to make it visually different from the rest of the light dome on top. This could be achieved in several ways:

1. Change the colour of the touch area on the dome. A different metallic colour here would not take away from the lamps looks, and give the user a visual clue as to where they might need to touch to turn on the lamp.
2. Some raised lines. Three or four horizontal lines over the area to touch would be a great indicator as to how to turn it on. We already recognise lines like that as a universal symbol to prompt touching, and understand something normally happens when you do. For example, an options or menu button for a smartphone app.
3. Indent the dome at the touch area. Instead of having a perfect half sphere as the dome, having a small indent could prompt the user that this is an area of interest, especially if it is a finger sized depression.

A combination of these changes might be most effective. To eliminate difficulties controlling the brightness setting, one might have a physical dial that adjusts the brightness This way the lamp would be a pre-set brightness every time it is turned on. A physical dial also provides feedback (by no longer turning), when the lamp is at the highest/lowest settings. This solution could potentially take away from the sleek design of the lamp. Therefore, an alternative solution could be to have visual LED feedback on the lamps dome to indicate what brightness setting the lamp is on. This could be completed in a stylish way without taking away from the lamps design. For example: having an ‘eclipsed-sun’ indicator that becomes less eclipsed as the brightness is increased.

## Conclusion

In conclusion, although these lamps were stylish they were hard for us to use. This was due both to preconceived notions about how a lamp works, and a lack of visual prompts. The design of these lamps would be more user friendly and intuitive if the above suggestions are implemented.

Matt Tucker

tuckmn1