Behavioral Science: How Graphically Designed Visual Sustainable Nudges Shape Behavior to Reduce Electricity Consumption

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Abstract

The aim of this article is to make parents understand how behavioral science and designing, thus a visual nudge, have a positive impact on kids' behavior towards electricity consumption and sustainability. The use of specific behavioral traits and findings (e.g. Framing Effect) improves the communication between family members by reducing nagging in a fun and educational way. Parents can simply apply the 'Light Switch' nudge by just printing it on their computer. Thus, it is an inexpensive and effective solution to reduce household electricity and also nudge your kids to create a sustainable habit. Results speak by themselves as parents have described this nudge as an interactive and constructive adventure for kids, parents and the environment, as well.

Keywords: nudge, sustainability, communication design, behavioral science, psychology, visual cues, choice architecture, interactive learning

Introduction

Parents told us that an often-encountered irritant was the necessity for them to remind their young children (aged 4-9) to switch off the lights. We took this cue to develop a nudge to encourage children to use the light switch when leaving a room. The aim of this nudge is to reduce electricity consumption to save money, promote the practice of sustainability and to mitigate parental stress.

Materials and Methods

The graphically-assisted nudges developed is a cutout template that is printed on a home computer printer and then affixed to a light switch plate. Parents access the graphically assisted nudges via the 'Nudging for Kids' website (nudgingforkids.com).

In the example of the 'fish and bowl' template, children understand that the fish is, 'out of place' and they want to help it get back to where it belongs (the fish bowl). Two alternate templates were developed using 'basketball' and 'bug' motifs. The bug motif uses the "cognitive learning effect" where the child remembers to switch off the light by associating it with the bug's color or a name he/she has given the bug. The basketball template, with its requirement to pull down the string holding the basketball, uses a child's desire to explore and understand by exercising her/his manual skills.

These graphically-assisted nudges are backed by Behavioral Science, because they are designed based on some basic cognitive and social biases that people tend to fall into.

The first one is the "IKEA Effect"; the tendency for people to place a disproportionately high value on objects that they have partially assembled themselves (regardless of the quality of the result).

Another one is the "Framing Effect", as we present the same option (of turning the lights off), but different conclusions are derived from the framing of it.

According to Hughes K., Thompson J. and Trimble J. E. (2016):

"In the context of social and behavioral science research, a frame is a central organizing idea or storyline that provides meaning to an unfolding strip of events weaving a connection among them. The frame suggests what the controversy is about, the essence of the issue. Simply put, framing creates a storyline by telling us what an issue is fundamentally about."

In the 'fish and bowl' example kids don't just turn off the lights, but they also develop the quality of empathy and togetherness through kids' actions and parents' directional instructions. These are creating choice architecture of delivering instructions for better interactions.

Results and Discussion

All three graphic nudges were installed with promising results in eleven homes near Westchester, New York (USA).

Sample commentary from parents included:

"My daughter developed a fondness for the fish while she switched off the light."
"My son enjoyed the basketball switch interaction so much that he wanted to step in and out of the room extra times to put the ball inside the basket…."
"… my children took breaks in between homework to use the basketball template (in my son's room) and the fish bowl (in my daughter's room)…and, made my day easier by not having to ask them to always switch off their lights".

Conclusion

Parents can take advantage of nudges as alternative solutions because they are inexpensive, quick and simple-made. In that way, they help their kids create some sustainable habits while they have fun.

Kids who encounter visual nudges tend to adopt the desired behavior after consecutive nudges, and they also behave in similar manner with smooth transition of habit formation, later even without the visual nudge. A vital aspect of nudging (for kids) is to create alternative way of thinking/choice architecture for kids; which parents, teachers, schools and kids organizations and companies can adopt in order to use visuals through Behavioral Science when issues arise in order to sustain long-term behavioral impact.

Acknowledgment

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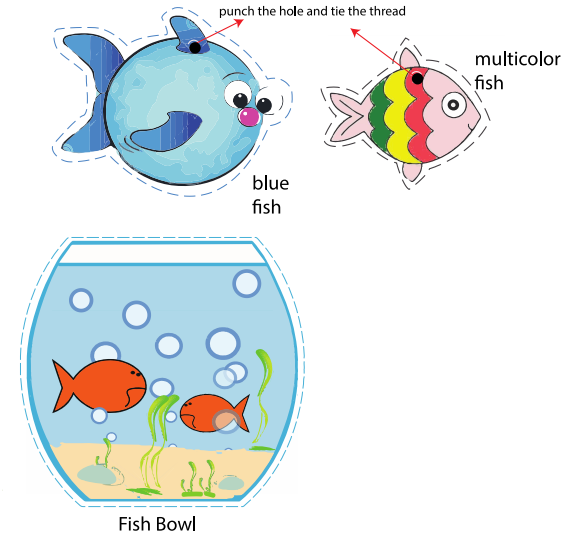
punch the hole and tie the thread
multicolor fish
blue fish
Fish Bowl

Fig1. & Fig 2

Fish Bowl Light Switch Template Assembly Instructions

1.To get started, you need:

a) The printed out provided template.

b) Scissors to cut the dotted lines.

c) Thread (any color but should be durable and thicker than common sewing thread).

d) Clear tape or masking tape or double sided tape.

2. Making the "fish":

a) Cut along the dotted lines around both the blue and multi-color fishes.

b) There is a small black dotted circular shape on the fish; punch this with a sharp object or pencil so a hole is made.

c) Pass the thread through the punched hole in the fish.

d) Tie the thread, which was passed through the hole, around the dimmer's up and down oriented sliding switch.

e) Adjust the thread so that when the light is on the mouth of the fish is outside the fish bowl and when the dimmer switch slides down then the fish fits inside the bowl.

3. "Fish bowl" creation:

a) Cut along the dotted lines around the fish bowl.

b) Roll the clear or other tape so that both sides are sticky.

c) Stick it behind the fish bowl.

d) Stick the fish bowl 1/4" below the dimmer switch plate.

4. Tell your children, "while leaving the room put the fishy inside the bowl", and, "help the fish be with his friends inside the bowl when you leave the room".

Fig 3

Fig 4

Fig 5