Designing for Children
- With focus on 'Play + Learn'

You Design It
A Self Directed Design Workshop for Children

Bryan Howell, Brigham Young University, Provo, Utah, USA, bryan.howell@byu.edu

Abstract: "You Design It" is a fun, simple, hands-on method of introducing the essentials of a conventional design process to children or any group of non-designers, regardless of age or artistic talent. Participants will, experience a six step design process and create a fresh new product.

Key words: Children, Non-Designers, Product Design, Six Step Design Process

1.0: Introduction
The workshop "A Design Process for Everyone" is a fun, simple, hands-on method of introducing the essentials of a conventional design process to any group of new or non-designers, regardless of age or artistic talent.

2.0: The Workshop Discovered
On a Saturday morning, I sat at the breakfast table with my children and asked them to help me create some new product designs. They happily agreed to help me. I asked them to make a lighting product for my work desk using items from our breakfast table. Using our plastic breakfast bowls, cups and saucers we began manipulating them into a variety of different shapes that lead to a variety of exclamations such as: "Look what I made"!

Soon they naturally begin to explore the qualities of the materials involved. They found a flashlight to represent the light bulb and discovered that they could change the color of the outside cup when they stacked two different colored cups together and lit them internally. The also found how the plastics luminosity could be varied through layering plastic, and by the proximity of the light source to the plastic shell.

These explorations led to representational forms of conventional lamp-shapes and other simple products, for example, a big yo-yo, a fat flashlight, a jewelry box, (Figure 1) wheels for a wagon, and odd but fun shapes without clear functional definitions.

Figure 1. Exploring Forms and Searching for Associations

These form-explorations opened up a world of associations. Pondering the function of a lamp we formulated some of the form ideas into new lamp concepts. Naturally, the children had no problem accepting new paradigms for lamp solutions, but I did. They enjoyed pushing the boundaries of what makes a lamp while I struggled to let go of my experience.

Through watching their intuitive process I recognized the elements of a pure design process and was astonished at the simplicity and quality of the design solutions that were produced and the joy in creating.

Wouldn't it be enlightening if all designers could work at such a pure and simple level? Adults however, are burdened with years of cultural indoctrination that prevents them from reaching a state of innocence and openness that children naturally have. This workshop captures the joy of building under the guise of a rationalized product design process.

2.1: The Objectives

The workshop demonstrates a product design process that is simple, pure, intrinsic and playful. It invites participants to enjoy the creative act of designing and teaches us that successful products are the results of constrained and iterative explorations.

Everyone, the young and old, the novice and expert, can participate in the workshop because it selectively bypasses many issues typically viewed as important in the product design field, primarily hand sketching form generation, material selection, and sophisticated construction techniques.

The workshop is designed to overcome tendencies to limit research and exploration in the initial phases of the design process and exposes participant's preconceived norms of form recognition. It then encourages participants to view their world with new eyes, to see "what could be", not just "what is" in the creation of a new and meaningful lamp. It accomplishes this by limiting participants to the use of prescribed materials and a range of rudimentary forms.

3.0: The Process

The workshop breaks down the design process into six distinct phases. Phase one defines the area of exploration, phase two sets the framework, phase three encourages component and material exploration, manipulation, quick prototyping. Phase four formulates design concepts, phase five verifies the solutions with a target audience, and phase six refines and consummates the design.

3.1 Phase One: Defining and Area of Exploration

Participants are to design a new lamp that is useful, useable and meaningful using the components and materials provided for a selected audience and location. For example, they could design a lamp for themselves, a parent, a brother or sister, a classroom, a pet or whomever. Many of the lamp forms will mimic existing cultural lamp forms (Figure 2), but it is expected that participants explore new forms of illumination that both challenge and reward the designer and the chosen audience.

Figure 2. Familiar Forms

3.2 Phase Two: Establishing the Framework

Participants are provided the framework or boundaries that they will be working within. This workshop is highly constrained in its use of form and material to promote creativity.

Designers and people in general, are typically unwilling to challenge the existing paradigms of any product category, including lamps. It's easier to understand what "has been" then to envision what "will be". Designers typically select materials and forms that they are familiar with, they lean toward a path of least resistance in searching for a new design solutions. Mike Baxter has a section in his book, *Product Design,* which concentrates on this issue. "The main difficulty in concept design is freeing your mind sufficiently to come up with original concepts" by overcoming "conventional modes of thinking". He has several concept generation methods that help designers "reduce the problem to its core elements" and "analyze… and generate a great many possible solutions" (Baxter, 1995).

For this workshop, the structured technique used to overcome conventional modes of thinking is derived by limiting the tools and components participants can use to design

their lamps. The workshop provides for the participants a standard set of design components in the form of plastic IKEA cups, bowls, and saucers (Figure 3).

Figure 3. IKEA Bowls, Cups and Plates

Participants were also provided tape, string, and small battery powered lights to build with. By limiting the components to a prescribed set of materials and forms participants' natural tendency to frame problems based on previous personal experience with lamps is defeated. Creativity is the only way out.

3.3 Phase Three: Component and Material Exploration and Quick Prototyping

Participants are expected to explore both conventional and un-conventional lamp configurations using the provided materials. Typically, participants immediately stack and tape the cups, bowls and plates together to emulate conventional lighting fixtures. This quick method of modeling demonstrates that participants can effectively communicate a multitude of ideas quickly without having hand sketching or computer modeling skills.

This playful prototyping process forces exploration of form, and consequently opinion on what is good and bad. Dennis Boyle of IDEO always takes prototypes to every client

meeting, especially the first meetings. He wants to "make his mistakes…and discoveries, as soon as possible" (Kelley, 2001). In this process the participants realize that they naturally migrate to lamp forms that they have seen and used somewhere in their history. Though the results are cute, participants rarely stop with this easy solution. Because the method of exploring and communicating multiple ideas through quick prototyping is so simple, they naturally continue exploring new shapes and forms, pushing the boundaries of what a lamp could be.

Participants tape the components together in unique ways, searching for insight and knowledge through experimentation and practice. They quantify formal qualities such as material color, luminosity, opacity, as well as the methods of fabrication and the interactions between light, material and form. Robust exploration will uncover ideas that resonate with the designer as they balance material qualities, basic functionality, and personal expression. These playful explorations become the foundations for innovative design concepts (Figure 4).

Figure 4. Component and Material Exploration and Quick Prototyping

3.4 Phase Four: Formulate Design Concepts

Participants are to build multiple design concepts or lamp proposals based upon ideas derived from what they believe are the needs and values of the intended audience. Courage and Baxter in their book *Understanding Your Users*, call this audience focused product development method "User Centered Design". This philosophy or method means that a product should "suit the user, rather than making the user suit the product" (Courage and Baxter, 1995). Thus, as the designer creates ideas and reflects upon the rhetorical aspects of the design, or its ability to persuade, irrelevant concepts are jettisoned, while those with clear value for the intended audiences are developed further (Figure 5).

Figure 5. Formulate Design Concepts

In the book *An Introduction to Design and Designing,* Garner discusses the difficulty of design problems. He states that "there is rarely a 'correct answer' to a design problem". Rather, "designing aims to achieve a solution that is satisfactory, or appropriate" for a situation (Garner, 2004). Thus, participants should have a list of meaningful criteria either gathered from the audience or considered as valued by the audience if the audience is not readily available. These criteria should be visible within the design

proposals. How an audience responds to the designers work is not always predictable, therefore, multiple design concepts need to be created and presented for review.

3.5 Phase Five: Verify the Design with a Target Audience

Participants present their design prototypes to the intended audience (if available) to confirm how and why certain designs persuade more than others (Figure 6). In *The Art of Innovation*, Kelley emphasizes how a prototype is "like a spokesperson for a particular point of view, crystallizing the group's feedback". Kelley states that "good prototypes don't just communicate-they persuade" (Kelley, 2001).

Figure 6. Design Corroboration with the Target Audience

The audience provides honest feedback as to the value of the proposal. The designer reflects upon these comments and considers which are important enough to include in the final design. The question must be asked, does this feedback strengthen or weaken the design concept, does it clarify or muddy the design idea, does it add value or is it just a reflection of the personal whims of the audience?

This activity verifies the message, the rhetorical nature, which each design concept conveys to an audience. It also provides the designer first hand insight into how and why others react to their design work. This can be challenging and rewarding at the same time, depending upon how the designer views his work and audience. A fresh set of eyes and thoughts reflecting on the presented design can often reduce a complex idea to a simple statement of clarity thus assisting the designer in refining the work.

3.6 Phase Six: Refine and Consummate the Design

Based upon the feedback provided by the audience, the participant refines the design concept and details the design into a final lighting solution (Figure 7).

Figure 7. Refine and Consummate the Design

Garner, in *An Introduction to Design and Designing*, calls this final step "detail design". This is when the selected design's final "form and arrangement of components is defined…and specified" (Garner, 2004).

In the workshops case, participants build a final robust version of the lamp to be presented and displayed on a nearby presentation table for everyone to see and comment

on. A name tag identifying the designer and the name of the product is filled out and mounted next to the final product design (Figure 8).

Figure 8. Displayed Lamp Designs

4.0: Conclusion

This workshop is designed to rationalize the pure, playful design process that naturally occurs as children build. It breaks down the children's intrinsic design process into six basic steps, the same basic step used by leading designers in industry. The workshop provides and area of exploration, in this example it was lamps, but it could be used for many other product categories as well. By establishing tight building constraints, the limiting of components and materials, it artificially establishes a context to mirror the cultural innocence of children and forces the "freeing of mind" that enables new concepts to emerge. The quick prototyping methods permits anyone to participate in the workshop without prior training and lets participants quickly move from common forms to creative forms of lighting. The idea of user centered design is introduced to provide objectives that must be met in potential design solutions, enabling appropriate solutions for different situations. Verification, the process of seeking meaningful value in the design work with a target audience introduces the rhetorical nature of a design. It demonstrates that in our

age of mass production and consumerism, where the manufacturing world has equal access to the same materials and production methods, the rhetorical nature of design becomes the meaningful difference that will evolve society forward. Finally, participants build and present an innovative, meaningful and complete lamp. The workshop is fun and playful; it encourages participants to embrace their creative freedom and helps them experience the simple joy of designing innovative and meaningful products.

References

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