

## Chapter 1

### INTRODUCTION

Within the realms of art, architecture and design, sketching is a tool used for problem solving (Crowe & Laseau, 1984; Gombrich, 1972; Lawson, 1980). Designers in general and interior designers specifically use sketching as a method of problem solving in the design process (Crowe & Laseau, 1984; Lawson, 1980; and Herbert, 1993). Sketching acts as a forum for experimenting with multiple solutions and allows the designer to mentally “see” or visualize possible solutions for the design problem (Herbert, 1993). Once the possible solutions have been manipulated and explored, the designer selects the most successful element to develop further often through more sketching (Jones, 1992; Lawson, 1980; Mitchell, 1993). Once this idea is fully developed, the designer will move on to more hard line drawing techniques such as hand or computer aided drafting.

The sketching portion of the design process is an important key in developing creative solutions to design problems (Herbert, 1993). Many of the basic principles and elements of design will be worked out in the sketching phase. Some of these are line, shape, form, space, light, movement and balance. When these elements are thoughtfully considered, through sketching, within the design process, better design results. The more thorough the process, the more organized and cohesive the design solution becomes.

In order to truly understand the role of sketching in the design process it is necessary to first understand the creative process and how it works (Amabile,

1983, Csikszentmihalyi, 1997). It is also important to understand the relationship that exists between the creative process and the design process. Because the creative process and the design process are both problem-solving processes, there is a parallel relationship between the two. The design process is essentially the creative process specifically applied to the field of design.

Visualization is a key part of the creative process and thus a key part of the design process (Arnheim, 1969). Sketching during the process of exploring a design problem is a tangible record of visualization (Herbert, 1993). Visualization is a cognitive process of imagining different solutions to a problem and the results of these possible solutions when they are applied to that problem (Arnheim, 1969). Study drawings are the visible evidence of that imagery.

This study will illuminate the visualization portion of the design process using the designers' documentation of their specific process through idea sketches. This study will also explore the effect of visualization through sketching on the design of the final product. Finally the students' responses to their own sketching will also be considered in seeking to better understand this phenomenon.

### **Creative Process**

Creativity is defined by Csikszentmihalyi (1996) as being "any act, idea, or product that changes an existing domain, or that transforms an existing domain into a new one," (p. 28). By domain Csikszentmihalyi (1996) is referring to an area of expertise. Essentially he is looking at creativity with a capital C, creativity that fundamentally changes society's understanding of a phenomenon. Creativity

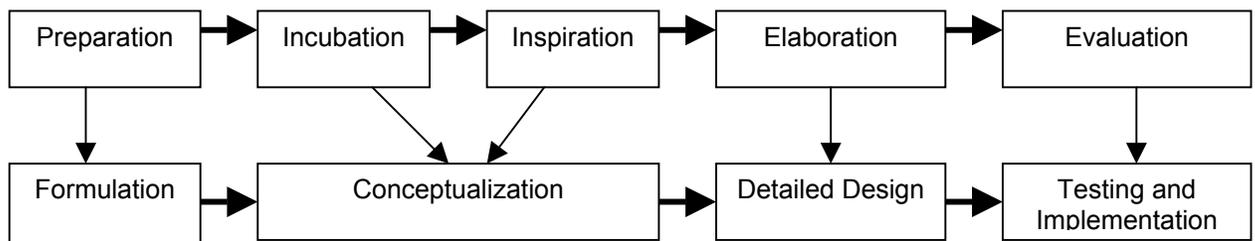
can also be examined as a trait common to many people who are “personally creative” (Csikszentmihalyi, 1996, p. 25). Most designers fall into the “personally creative” area.

Associated with creativity is the established process of creativity. Wallas (1926) was the first to associate procedural steps to the creative process. The five steps are Preparation, Incubation, Insight, Evaluation and Elaboration. This process of creativity can be specifically applied to the first stages of the design process where the design process is simply a specific application of Wallis’ five steps.

### Design Process

The design process is the thought process through which most designers engage in order to solve a design problem (Jones, 1992; Lawson, 1980; Mitchell, 1993). Many different researchers have proposed design processes and they are somewhat similar to each other. Essentially the design process is parallel to the creative process (Figure 1). So the idea of a design process is that the creative process may be specifically adapted to a particular field. In this case the creative process is specifically adapted to the field of interior design.

### Creative Process Compared to Design Process



- ➔ Primary process throughput
- > Comparative Relationship

## **Sketching and Visualization**

Visualization occurs in the Incubation step of the creative process (Amabile, 1983; Csikszentmihalyi, 1997; Wallis, 1926). This is when the conscious mind turns the problem over to the unconscious mind. While the designer is actively involved in another activity the subconscious is searching for possible solutions. When the subconscious is ready to introduce a solution, the activity will move from subconscious to conscious. At this point a conversation can begin between visualization and sketching. The image in the mind is sketched and then manipulated in a conversation that occurs between what exists in the mind's eye and the designer's sketches (Goldschmidt, 1991; Schon, 1983; Verstijnen, Hennessey, vanLeeuwen, Hamel & Goldschmidt 1998). Here the image guides the sketch which then poses questions back to the vision. The vision then might be modified and then sketched again. This is the conversation that occurs between conscious and subconscious.

## **Problem Statement**

It is impossible at this point to fully understand the cognitive processes that guide design because it is especially difficult to evaluate the more subconscious nature of the Incubation step of the creative process. In interior design the designers' process records (any drawing produced in solution development) allow the researcher physical evidence to study the nature of the creative phenomenon. Additionally, while there is theoretical literature that argues the necessity of sketching in the design process, there is no quantitative empirical data to support these theoretical observations.

**Purpose**

The purpose of this research is to explore the diagrams and sketches that document the design process and how these diagrams and sketches relate to the final design outcome.

**Justification**

Understanding how the creative process effects design solutions will not only help individuals to use and guide their creativity effectively, it will also help educators to teach students how they may better utilize their creativity. This information would help educators guide students through the process of design. Additionally, understanding the importance of sketching in the design process, educators students and practitioners might also seek to improve their drawing skills. They would thus enhance the communication between the conscious and subconscious as well as with each other during a design project.

**Objectives**

The objectives of this study are:

1. To explore visualization through sketching
2. To compare process (sketching) with the final product