

## How does designer think with drawings in design process?

### Approaching to the Creative Thinking in Design Process (2)

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#### Abstract

In the first half of this research, we focused in that how designer think with keywords in design process. We already held two experiments (experiment 1 and 2) on the role of keywords in design thinking process. In this paper we focused into the designer's drawing. We prepared three experimental studies to know how drawings devote to creative design. The experiments were composed of three steps.

Experiment 3 was held to know the types of drawing as creative process in design. About 80 subjects were assigned tasks to design two kinds of paperweights. One was giving image of relaxation and the other was giving image of excitement. From the result of this experiment, some typical thinking types were extracted from drawings. Among those types, the evolving type had the highest rate of generating solutions of the task.

Experiment 4 was held to know how creative thinking was done. Subjects were assigned tasks with two different keywords in difficulty for form making. As the result of this experiment, the keyword which was more difficult seemed to be related to metaphors in creative process.

Experiment 5 was to know creative process minutely as conversion process from verbal description of design purpose to the fit form for it. Subjects were assigned task to design a chair of giving sad image. From the result of this experiment, two paths in thinking process were shown.

We concluded that creative design thinking needs higher abstracted level in conversion of goal description to visual image of it through interactions between drawing and concept.

#### Keywords

Design, Thinking process, Creativity, Experiment, Education

## The development of method to get Kansei pattern using appreciation Robot

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#### Abstract

The objective of this research was to develop the tool of data gathering for the Special Project of Kansei in University of Tsukuba. This data gathering system was remaking the tracking route of appreciation robot to true human behavior.

In the special project we were trying to get Kansei element through human behavior pattern in the scene of art appreciation in the art museum. We got some data of behavior pattern using the networking robot. But, it had some differences between human behaviors to robot movements. Because, the robot had zoom function in the CCD camera system but the man had no such function in their eyes. So, we developed the software that was based on the log data of the robot only. The robot had the log data of position, zoom ratio and direction of camera, etc. New developed software was based on the robot log data and calculated like human behavior log.

We had Kansei appreciation behavior pattern hypothesis already. But that was just human behavior only. On the other hand, we had the robot to get the appreciation pattern. After this software using, we could get the human behavior log through the networking robot. The result of this research, we could get the Kansei behavior pattern through the robot movement log.

#### Keywords

Kansei, Robotics, User Interface