

Design vs Research

Introduction:

The connection between design and research is fraught with difficulties. Design itself is not research, but the 2 domains are equal in intellectual significance. Typically, the factors that contribute to the production of design lack 'necessity'. There are, however, necessary connections in the design process (input goes into the human mind, and design is the processing that produces a figural outcome). These connections are so structured, that they have enabled robots to reproduce design traits (consider the case of human images drawn by a computer named AARON; here rules allow for the generation of human forms in an unlimited variety of poses). Of course, design cannot be completely explained by means of rule-based protocols. A complete summary of a designer's operations would still not tell us where the solution came from. While a system may be programmable and predictable, the capacity for figural representation is not (design consists of both rules and 'inspiration').

Design= Valid Reasoning:

Even though, in the past, subjective experience has been devalued, since the 18th century a shift in ideas has taken place. Art theories now consider each person's subjective experience as determinative (this, based on Kant's 'critical philosophy'). Aesthetic (design) thought is now seen as a formal process:

1. First, the mental faculties sense a heightened 'membership with nature'.
2. This leads to the mental faculties being engaged in 'play'.
3. This play produces, first, a 'purposive momentum', and then... aesthetic ideas.
4. The aesthetic ideas strive for expression in reality.

Reason, thus, considers both aesthetics and 'science': aesthetic experiences are part of the domain of reason, even though they cannot be fully explained by formulas. Today, however, even in academic circles, research is considered to be a more legitimate form of scholarly inquiry than design. Efforts should be made to encourage the view that design activity and research activity are of equal value. There are several methods to bring design closer to research value.

Design + Research Methodology:

- Research about design creativity: One method for formalizing the research value of design is to have it 'piggy-back' on research. Design creativity itself can be the subject of research (design broken down into definable segments). This is known as ideographic research, where the focus falls sharply on the individual case study and its particularities (as opposed to the search for general laws). The researcher here could also be the designer, when research is used to know as much as possible about a design project before working on it (here, in what could be called 'pre-data collection', the focus would fall on the flow-path from mission to goal to requirement to concept (by asking "how? how? how?"), and the backwards to a possibly different mission (by asking "why?"). Research could also focus on design 'after-the-fact' (PPE; post-production evaluation; where design is looked at once it has been produced, to see if it does what it is supposed to do). The problem with pre- and post-data collection is obviously that the episodes of research are limited to the introduction and the epilogue. The 'middle zone' (the design process itself) is left unaddressed.

- Action research: This is a sort of correlational research, applied to actions in localized settings (how factors relate to each other as a process moves toward a specific goal). In this case, the 'action' is specifically 'creative design' (complete with ways of doing, implicit understandings, technical terms, and so on, that arise in the midst of creating a design).

- Structured design: In this model, design's research potential is empowered by actively recognizing formal categories in design. Two primary ones are:

Generator-function-domain: Who produces a design? What is the function of the

design? Is it internal or external?

Operations–products–contents: What operations produce a design? (evaluation, convergent thinking, divergent thinking, cognition, memory) What is the structure of the design? How is it structured as a product? (unit, class, relation, system, transformation, implication) What are the contents of the design? (figural, symbolic, semantic, behavioral)

Structured design focuses on integrating a cluster of requirements into an integrated solution. Any one topic can be approached in multi-dimensional ways. The designer needs to learn these ways as part of his/her design process. As mentioned earlier, some of design is 'strategic' (experience and rules-of-thumb), but some of it is 'tactical', and in particular is about the designer avoiding the following traps:

- ⊗ *The category trap*: Where solutions to other problems are recycled.
- ⊗ *The puzzle trap*: Where the designer assumes that good design must be visualized in a particular pattern.
- ⊗ *The number trap*: Where code regulations are followed blindly.
- ⊗ *The icon/ image trap*: Where established typologies influence designers.

· Collaborative design: This in itself is about more than teamwork. Collaborating actively allows a designer's product to become 'universal' (and thus as valid as research, since it is produced while the community context is being researched). Traditional images of designers are those of designer-as-technician (very self-interested) and designer-as-artist (aiming towards connectedness). Both of these models set the designer apart from others, and bring about disjunctions between what is designed and what everyday clients may want. An alternative proposal is that of designer-as-cultivator (more sensitive to a larger communal mission of well-being). This encourages the following: collaborative process, interdisciplinary design, and an appreciation that the cultural is the soul of design.

Recommended Readings:

John Chris Jones, 'Design Methods' (1992)

Bryan Lawson, 'How Designers Think: The Design Process Demystified (1988)