

中文摘要

從設計思考的角度來看，Archer(1964) 提出“操作性設計模型”，著重強調各個設計程序之間的關連性及回饋行為。從設計媒材的角度來看，Tversky (1999)提出草圖是一種觸發方式，關於設計早期階段，草圖作為一種個人思考的工具而非為了公開的溝通與以表現法為其目的。而設計者運用自己的想像力和專業知識及經驗發展設計時，取用合適的表現手法和可行的材料與施工技術，逐步將腦中抽象的意念轉化為具體的建築物 (Liu 1996)。簡言之，草模為一種觸發方式思考設計。然而過去研究僅僅提及媒材在設計上的使用，缺乏獨立探討媒材觸發設計思考之角色。因此，本研究所要探討的議題是電腦媒材觸發設計思考因子之研究。本研究目的先從電腦媒材應用於草圖及草模二階段，開始討論不同設計媒材的應用如何觸發設計者思考的現象。

本研究分三個步驟。第一，提出假設：當設計者發想概念時，不同的媒材提供不同的觸發機制。第二，認知實驗用來檢視電腦媒材之觸發能力。最後，以 Suwa, Pucell, and Gero(1998)的四個動作範疇改良成新的動作編碼系統進行分析。分析資料來源以設計過程的視覺資料為主，口語資料為輔。進一步驗證不同媒材能提供不同的觸發機制。結果找出三點關於觸發角色之現象。

關鍵字：觸發因子、電腦媒材、草圖、草模、口語分析

Abstract

In the view of design thinking, Archer (1964) proposed "the operational design model", emphatically emphasizes the relationship between individual design procedures and the feedback behavior. In the view of design media, Tversky (1999) proposed that sketch as a trigger. Drafting has always been applied as a tool to stimulate individual design thinking instead of being an open presentation. The designer employ appropriate methods of presentations as well as feasible materials and construction techniques and gradually transform abstract ideas into concrete building structures while utilizing personal creativities, expertise and experience to develop design (Liu 1996). In brief, conceptual model as a trigger in stimulating design thinking. However, the past studies had merely touched on the use of media in design. What seems to be lacking is the role of trigger via media in design thinking. Therefore, the issue of this research is a study on trigger factors via computer media. The objective of this research is to explore the trigger capacity via computer media in sketching-phase and conceptual-model-phase.

This study consists of three steps as following. First, a hypothesis is suggested; while designers generate ideas using computer media, different media can trigger different reaction. Secondly, cognitive experiments are conducted to examine the trigger capacity via computer media. Lastly, the revised coding system is conducted with the action categories by Suwa, Pucell, and Gero (1998). The analysis material is primarily the process of the visual data and the verbal data. Further confirms the different media to be able to provide differently triggers. As a consequence, three phenomena about the role of trigger are found.

Keywords: trigger, computer media, sketch, study model, protocol analysis