

摘 要

本研究探討台灣盲人的立體再現發展，並比較與明眼人在平面、立體再現的關係。參與者為 5-18 歲先天全盲或無形狀識別的光覺者 24 位。研究包括三個再現作業及二個複製作業。結果建議盲人 3D 再現的發展序列，並發現盲人 (1) 在 3D 再現上未因為感官補償作用而優於明眼人，反而落後 4 年。(2) 視覺是有利但非必要條件，故 3D 表現略優於 2D 表現。全盲者能掌握物體的結構，唯細節較少。(3) 進入青春期後 3D 人物再現優於 2D。盲人能創造出符號性的樣式，類似明眼人在概念、形式之發展。其早期 2D 經驗能影響 3D 策略。少數先天全盲者屬 Lowenfeld 的視覺型。(4) 1/2 參與者塑桌子時採 2D 式的展開策略，但與明眼人意義不同。(5) 與明眼人同，能分解複雜幾何模型成多個基本單位，先複製各單位再將之組合。有機模型表現較弱。立體複製與再現能力呈正相關。

關鍵字：立體媒材，盲人，再現與複製策略，觸覺，繪畫，雕塑

Abstract

This study investigates the development of blind children and adolescents' strategies to represent and copy solid objects through 3-D medium. The 24 participants, aging 5-18, are either totally blind or with minimal light perception (no pattern recognition). The results suggest the blind's developmental stages of 3-D medium. Other main findings are: 1. The blind's 3-D representation development is fallen behind the sighted about 4 years. 2. Prior visual experience is a facilitative but not a necessary condition to 3-D representation. Visual experience is critical on quantity of details, but not on the construction. 3. In the "modeling a person" task, the 3-D representation becomes more advanced than 2-D at adolescence. Comparing with earlier studies, there is no conceptual and formal difference of the human-figure representation made by the blind and the sighted. Their earlier experience of 2-D medium influenced the strategy of 3-D representation. The minority of congenital blind participants is classified into "visual type". 4. Some participants used fold-out strategy that is sometimes adopted by the sighted young children, but the meaning should be different. 5. The blind can analyze complex geometric form into simple geometric units in the copying task. Therefore, copying an organic model is more difficult. The phenomena are similar as that of the sighted. The correlation between the 3-D representation and copying a 3-D model is highly positive.

Keywords: 3-D media, blind, copying and representation strategy, tactile, drawing, sculpture