

摘要

本研究為解決科技大學設計基礎課程內容重複、學生學習動機低落的問題，提出將傳統竹編工藝融入「平面構成」課程的 STEAM (science, technology, engineering, arts, mathematics) 創新教學模式。研究採用「三方共構」(工藝師、教師、學生) 與 6E 教學法。課程結合竹材特性、數位圖形運算與竹編技藝，並在地竹編器物設計生活化情境。學生透過「壓、挑、鎖」等實作，將抽象的「點、線、面」設計原則轉化為具體的材料體驗。研究結果顯示，課程滿意度與 STEAM 教學回饋呈顯著正相關 ($\rho = 0.617, p < .001$)，並有效解決 80.6% 學生的課程重複感。質性資料顯示，學生作品展現動態視覺、漸層圖案等創新形式，「先電繪模板、再實作、後補繪圖稿」的流程亦較符合學生認知。此模式證明，透過材料(如竹篾厚薄、顏色)的直接互動能激發創新，不僅提升學習動機與文化認同，也為基礎設計教育和傳統工藝的現代化提供新的發展方向。

關鍵詞：STEAM、竹編工藝、設計教育、構成設計

Abstract

This study addresses curricular redundancy and low motivation in foundational design education by integrating traditional bamboo weaving into the two-dimensional composition course, through a STEAM (science, technology, engineering, arts, mathematics) framework. Conducted with creative product design students, the course adopted a triadic co-construction model (craftsperson, educator, students) and applied the 6E teaching phases. Curriculum content combined bamboo ecology, material properties, computational graphics, and weaving practices. Using an action research approach, results showed strong positive correlation between course satisfaction and STEAM instruction ($\rho = 0.617, p < .001$), resolving redundancy for 80.6% of students. Qualitative findings revealed innovative outcomes such as semi-relief and dynamic visual patterns. The adjusted process of “digital template → weaving → supplementary drawings” enhanced creativity. Overall, the model deepened design education, fostered cultural recognition, and demonstrated its value for both pedagogy and craft preservation.

Keywords: STEAM, bamboo weaving craft, design education, composition design