

## 摘要

本研究欲探討大學生對自然科學與社會科學抱持之知識論信念以及相關因素。過去關於科學知識論信念的研究相當多，但大多未從科學哲學的角度進行有系統的概念分析。而且，過去研究的探討範圍僅限於自然科學，未顧及社會科學。另外，過去研究亦少從文化與歷史觀點，探索華人學習科學的特殊動機。為了解決這些問題，本研究包含三項子研究。研究一根據科學哲學之概念分析，編制具備信效度之「科學知識論信念量表」。此量表包含三個因素：「理性客觀」、「真理觀」與「歸納法」。研究二使用此量表，測量與比較 252 名不同主修領域之大學生對於自然科學與社會科學之知識論信念。 $2(自評主修:自然/社會科學學生) \times 2(學科領域:自然/社會科學領域)$  MANOVA 結果發現：(1) 大學生對於自然科學之「理性客觀」、「真理觀」與「歸納法」信念顯著高於社會科學；(2) 主修自然科學之學生較社會科學學生在知識論信念上更抱持「真理觀」，並且更倚賴「歸納法」；(3) 自評主修與學科領域在「理性客觀」、「真理觀」信念上，有顯著交互作用。研究三進一步從文化心理學的角度，分別針對自然科學與社會科學領域，探討知識實用主義、科學知識論信念與科學學習興趣三者之關聯。結構方程模式分析結果顯示：知識實用主義藉由科學知識論信念之中介，正向預測對自然科學之學習興趣；然而，知識實用主義卻負向預測對社會科學的學習興趣，且僅有「真理觀」顯著預測社會科學學習興趣。

**關鍵詞：**知識實用主義、科學知識論信念、科學哲學、學習動機。

## Abstract

The main purpose of this research is to investigate undergraduates' epistemological beliefs about natural science and social science. Most studies related to epistemological beliefs of science (EBS) lack of consideration from conceptual frameworks of philosophy of science. Besides, in previous studies, "science" usually means "natural science" but not refers to "social science". Moreover, the relationships between learning motivation and EBS of Chinese students need to be explored further from the perspectives of culture and history. In order to investigate these issues, the present research contains three studies. In study 1, a scale of EBS based on concepts of philosophy of science was developed. The scale was composed of three epistemological beliefs: "rationality and objectivity", "realism", and "induction". In study 2, the scale was adopted to measure 252 undergraduates' epistemological beliefs about natural science and social science. Results of the 2 (majors of students: natural/social sciences) x 2 (areas of beliefs: natural/social science) MANOVA indicate that: (1) All three epistemological beliefs on natural science are higher than those on social science; (2) epistemological beliefs of "realism" and "induction" among students major in natural sciences are higher than those among students major in social sciences; (3) majors of students and areas of beliefs have interaction effects on beliefs of "rationality and objectivity" and "reality". In study 3, the relationships among students' belief of pragmatism, EBS and learning interest in natural and social science were explored. The results of structural equation model show that, for natural science, students' EBS positively mediate the relationship between their belief of pragmatism and learning interest. However, for social science, students' belief of pragmatism is negatively correlated with their learning interest. Furthermore, only the belief of "realism" is positively correlated with students' learning interest in social science.

Key word: belief of pragmatism, epistemological beliefs of science, learning motivation, philosophy of science.