

國中學生對科學教師學科教學之知覺
Secondary School Student Perceptions of Science Teacher's Knowledge

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中文摘要

Shulman (1986, 1987) 認為教師必須具備良好的學科教學知識 (pedagogical content knowledge), 其為教師能否施行有效教學的重要指標。對於教師學科教學的研究, 過去都以教師為主要研究對象, 而很少由學生的角度來探討, 本研究的目的, 即試圖探討學生在教室環境中對科學教師學科教學表現的感受, 以了解我國科學課室教學的面貌。本研究統合收集和分析質與量的數據, 以探討研究的主題。量的資料收集主要以問卷調查為主, 研究對象為本省台北、台中和高雄三都會區的國中學生, 利用二階段叢集隨機取樣方式, 抽出以上三都會區二十五所國中, 共 50 班作為施測的對象, 受調查學生人數共計 1,879 人。研究工具主要為「學生對教師學科教學知覺」問卷, 分別對受調查班級的學生進行調查。質的資料收集則選取生物教師三位、理化教師三位, 以「學生對教師學科教學知覺」問卷為主要參考架構, 對上述六位科學教師上課情形進行教室觀察和錄影、師生晤談及文件資料收集, 所收集資料, 經歸納、分析和比較, 以進一步印證量的資料結果。研究發現學生認為科學教師的學識豐富可以肯定, 但察覺到老師經常利用考試來檢查他們的學習情形, 而老師所用之知識表徵方式和教學策略與活動等的多樣性較少; 本研究也發現學生對教師的學科教學知覺隨教師性別、學科、學生性別、學校大小和地理位置等因素而有顯著不同。本研究的結果, 除可供教師自我教學反省改進外, 也可提供師資培育課程 (包含課程內容與傳授方法) 之參考, 以協助未來科學教師獲得他們在教學中所需要的知能。

關鍵字：教師學科教學知識; 質與量數據統合運用; 學生的知覺

Abstract

Pedagogical content knowledge (PCK) has been suggested by Shulman as one major indicator of a teacher's ability to implement effective classroom strategies. Assessing teachers' knowledge from the students' points of view is suggested as reliable and valid. Therefore, the purpose of this study was to investigate what are students' perceptions of their science teacher's knowledge, and what factors influence students' perceptions of science teacher's knowledge. A combination of quantitative and qualitative data collection and analysis was used in this study. "The Student Perceptions of Teachers' Knowledge" (SPOTK) questionnaire was used to explore students' perceptions of their science teacher's teaching. A two-stages-cluster random sampling was used. The sample included fifty classes of students from the metropolitan areas of Taipei, Taichung and Kaoshiung (N = 1,879). The qualitative data were collected by using classroom observation, videotaping, and interviews. Six science teachers and their classes were observed. Study results indicate that the students perceived their science teachers as generally knowledgeable and competent. Students perceived that their teachers tested them frequently and used a limited variety of instructional strategies. The study also finds that the students' perception of their teachers' knowledge varied with such factors as subject matter, teacher sex, student sex, location of school, and size of school. It is argued that the findings from this study may help teachers in the following ways: (1) provide an opportunity to reflect their own teaching; (2) help to assess their classroom teaching, and (3) provide information for improving the PCK of preservice science teachers.

Key words : Pedagogical content knowledge; Combining qualitative and quantitative data; Student perception