

# 國立高雄師範大學九十七學年度碩士班招生考試試題

系所別：科學教育研究所

科 目：科學教育（全一頁）

一、描述你印象中最深刻的科學課，並加以評論。(25%)

二、近年來我國參加了 PISA 與 TIMSS 等國際性評鑑研究計畫以瞭解我們學生的學習狀況。

(1) 何謂 PISA? (5%)

(2) 何謂 TIMSS? (5%)

三、試敘述進入 21 世紀後我國的課程改革動向與其背後的理論依據。(15%)

四、一項以年齡為導向的 PISA 調查研究顯示，台灣學生解釋科學現象的能力很強，排名全球第三；但科學論證的能力，只有第八名；形成科學議題的能力更弱，只有十七名。因應此調查研究的結果，請說明在科學課程與教學方面應如何調整，以培養學生科學論證的能力與形成科學議題的能力？(25%)

五、閱讀下列文字並回答問題

We are fortunate to be able to draw upon a chapter in the *Handbook of Research on Science Education* written by Dr. Chong-Jee Guo (2007), President of the National Taitung University, Taiwan. He reviewed science education research from an international perspective and pointed out a worldwide trend towards transforming globalization and a knowledge economy into pervasive goals for school science. But he quickly added that these goals are seriously flawed because they ignore two major problems that all countries face today:

1. How can we motivate, teach, and assess students' learning in science so that "optimal results can be obtained for students' individual development and for the benefit of society as a whole" (p. 249).
2. A mismatch exists between, on the one hand, the conventional goal of school science to select and train elite students for science and engineering careers, and on the other hand, the 21<sup>st</sup> century goal supported by a new worldwide consensus on school science being relevant to events and issues in students' daily lives, now and in the future.

(1) 上述文字取自何處？作者是誰？(5%)

(2) 作者綜覽國際上有關科學教育的研究後，指出全球對學校科學的目標之趨勢為何？(5%)

(3) 但也很快指出在各國此目標會落空的普遍問題為何？(8%)

(4) 對作者的看法有何回應？(7%)