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奈米科技教育的成效評估

陳麗文

國立臺中教育大學科學應用與推廣學系
臺中市西區民生路 140 號

摘要

奈米科技教育自2003年以來，經教育部及國科會大力支持下，10年來逐漸推出各式的教案、創造出教具以及推廣的策略。為了要評估奈米科技教育的教學與推廣成效，因應也發展了評量的工具。本文主要探討評量方式及評量工具在奈米科技教育的應用。研究者由收集的教學報告中，分析其所使用多元評量模式，並探討評量的選用及施行方式；並從教師的教學方法與教學目標，來察看教師擬培育之基本素養與核心能力與選用評量方式的適切性。研究發現紙筆測驗仍為最常使用的評量方法及種類，而過程評量與技能評量則較少見諸於報告中，這與奈米科技教育教學目標的設定並不密切吻合。因此，有效的發展與運用評量工具在奈米科技教育仍需持續進行與關注。

關鍵詞：奈米科技，教學成效，評量

The efficiency of Nanotechnology Education

Li-Wen Chen

Department of Science Application and Dissemination, National Taichung University of Education, Taichung 40306, Taiwan

Abstract

From 2003, the plans of ministry of education and minister of national science council gave huge impetus to nanotechnology education. The lesson planning proposals, teaching aids and strategies for nanotechnology education were increase and rich. Therefore, the assessments to measure the teaching and learning effects have been developed. The aim of this study is wanted to discuss the methods and tools of nanotechnology assessments. By using content analysis method to view the teaching reports, the inspections of the choice and application of assessments were studied accompanied with the teaching designs. It was found that the utilization of paper exam is the highest method. Otherwise, the processing test and skill test were rarely being found. This phenomenon is not closely match the teaching goal of nanotechnology education. It is suggested that the assessments for nanotechnology should be continued developing and take an eye on it.

Key words: Nanotechnology, teaching & learning effect, assessment