

## 幼兒數量表徵與抽象化關係之研究

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### 摘 要

本研究之目的在探討4、5歲幼兒進行數量表徵的過程與類型、抽象化層次（以數保留概念的發展層次代表），以及這兩種能力之間的關係。本研究採用個別晤談方式訪談37位4、5歲幼兒，以故事提供情境，進行數量表徵測試與標準數保留測試，並對幼兒的數量表徵類型及抽象化層次加以分析。研究結果發現，在提供一個具溝通意圖的故事情境下，有62.2%的國小附幼4、5歲幼兒能採用數字方式表徵集合總數，有70.3%的4、5歲幼兒無法做反省抽象化，也不具有數保留概念，但是約有四分之一的幼兒已進入過渡期。而能使用數字表徵數量的幼兒未必能通過標準數保留測試，但是具有數保留概念（抽象化層次最高）的幼兒一定能使用數字表徵，表示4、5歲幼兒的數量表徵類型層次的發展先於抽象化層次。最後，本文對研究結果進行討論，並對未來研究提出建議。

關鍵字：抽象化、表徵、數保留概念、數量表徵類型

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## **The Relationship between Quantity Representation and Abstraction in Young Children**

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### **Abstract**

This study investigated the relationship between types of quantity representation and levels of abstraction in 4-and 5-year-olds. Thirty-seven young children were asked to complete both a conservation task and a quantity representation task. Their notations and levels of abstraction were analyzed. The results showed that most young children used written cardinal values alone to represent quantity. Most young children, however, failed the conservation task. Moreover, young children who could use number representation did not necessarily have the ability to conserve numbers. This meant that the level of quantity representation was higher than the level of abstraction. The results and their implications regarding education and future research were presented and discussed.

**Keywords:** abstraction, representation, number conservation, types of quantity representation

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