

# 實體物融入數學教學對國小低年級學童生理及心理反應之研究

劉美辰, 石晉方

營建管理學系

建築與規劃學院

shrj@chu.edu.tw

## 摘要

L. Ron Hubbard, mentioned in his book, Basic Study Manual, that lack of real objects in instruction leads to learning obstacles which can cause physical and mental responses. The study aimed to discuss if there were any obvious differences regarding physical and mental responses between traditional instruction and real-object instruction, and understand their learning feelings. The study was a quasi-experimental research with pre-test and post-test. Twenty-eight students of a first-grade class in an elementary school in Taichung were the subjects. It was an eight-week experimental math program. The first volume of math textbook of Han Lin Publishing Co., Ltd was used, along with self-made materials and the appendixes of the book. The class was videotaped to compare the pre-test and post-test. At the end of the program, the students filled out a questionnaire on instruction, and their opinions on the real-object instruction were analyzed. The research data were analyzed with SPSS 12.0. Wilcoxon signed ranks test and descriptive statistics were used to examine the hypotheses of the study.

The results were as follows:

- I. After the application of real-object instruction, the frequency of negative physical and mental responses was significantly lower than when the class was lectured with traditional instruction.
- II. After the application of real-object instruction, the following seven physical responses, including being bored, sort of dead, spinning, feeling bent, squashed, dizzy and exasperated, were significantly different.
- III. Students had a positive attitude toward real-object instruction in math.

關鍵字：real object, teaching aid, physical response