

ABSTRACT

A Quantitative Synthesis of Single-Subject Researches into the Effect of Behavioral Modification on Academic Behaviors

by

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The purpose of this study is to investigate the effect of behavioral modification on academic behaviors by aggregating relevant conclusions of primary single-subject researches. Two approaches are used to generate estimations of effect sizes: the PND (Percentage of Nonoverlapping Data) approach, and the PEM (Percentage of Data Points Exceeding the Median of Preceding Baseline Phase). To test the applicability of the PEM approach, the validity of the PEM scores is compared with that of the PND scores by using the judgments of original authors as a validity criterion.

A total of 98 studies are reviewed. Treatments include (a) computer assisted instruction; (b) cooperative learning; (c) mastery learning; (d) reinforcement; (e) self-control training; (f) situated learning; (g) social learning; (h) strategy instruction; and (i) others.

Results indicate that all kinds of interventions produce positive effects on participants' academic behaviors. In addition, the PEM approach is shown to be an appropriate method for a quantitative synthesis of single-subject researches.

Key words: single-subject research, meta-analysis, PND (Percentage of Nonoverlapping Data), PEM (Percentage of Data Points Exceeding the Median of Preceding Baseline Phase), academic behavior

摘要

行為改變技術對學業行為影響之個案實驗研究之統合分析

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本研究藉由整合相關之單一受試實驗研究結果來探討行為改變技術對學業行為影響之效果。研究中用來計算效應量的方法有兩種：未重疊資料百分率 (Percentage of Nonoverlapping Data, PND)、超過基線中點資料百分率 (Percentage of Data Points Exceeding the Median of Preceding Baseline Phase, PEM)。為了檢視超過基線中點資料百分率方法應用在單一受試實驗研究統合分析上之可行性，本研究以各原研究者之判斷為效標，對超過基線中點資料百分率與未重疊資料百分率之效度進行比較。

一共有 98 篇單一受試實驗研究納入統合分析。實驗的介入處理共分成：1. 電腦輔助教學、2. 合作學習、3. 精熟學習、4. 增強、5. 自我控制訓練、6. 情境學習、7. 社會學習、8. 策略教學、9. 其他。研究顯示各種介入處理對於受試的學習行為皆產生正向效果。此外，超過基線中點資料百分率方法亦獲得支持適用於單一受試實驗研究之量化統合分析。

關鍵詞：單一受試研究、統合分析、未重疊資料百分率、超過基線中點資料百分率、學業行為