



Montague – CTE Scholar
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Examining the Effects of Group Contingencies on Problem Behaviors and Academic Performance: A Meta-Analysis of Single-Case Research

Overview

I have been conducting meta-analyses of single-case research for the past six years. I've enjoyed mentoring my doctoral students as they've worked with me on my research projects—and have been proud to watch them branch out on their own independently to conduct meta-analyses on topics of interest to them. In addition, I have been fortunate to have been awarded three Undergraduate Student Research Initiative (USRI) awards through the College of Education. I am excited and thankful that my Montague-CTE award monies have helped me support undergraduate student research focused on meta-analysis. This poster describes the research experiences of each of my USRI students, and specific research questions and preliminary outcomes for our current meta-analysis.

Undergraduate Students' Research Experiences

Undergraduate students from HLKN and ENTO have learned about research methods in general, and meta-analytic procedures in particular that **they can apply in their respective fields of study**. They have had the opportunity to **actively engage** in research by:

- Learning about **research methods** (group and single-case), as well as differences in traditional literature reviews and meta-analysis
- Learning how to use our Texas A&M library system to **search databases to review the literature** on a given topic
- Becoming familiar with **peer-reviewed research**
- Learning about the process of **developing inclusion/exclusion criteria and research questions**
- Attending regular research meetings and **participating in the development of a coding scheme**
- **Helping conduct article coding and calculating interrater reliability**
- Learning about **effect size calculation and applying** nationally recognized **standards for determining methodological quality** and design strength

Study Purpose, Research Questions, Potential Moderators

Group contingencies are behavior management procedures that have been implemented to address academic and behavioral difficulties in classroom settings (Kleinman & Saigh, 2011). Although they have been widely used for more than 40 years, no meta-analysis currently exists that investigates their efficacy across student and intervention characteristics. This study seeks to fill the gap in the literature. Research questions are: (1) What is the overall effect of group contingencies across studies? and (2) What are the effects of potential moderators on students' behavioral and academic outcomes? Potential moderators are: (a) grade level, (b) disability status (viz., behavioral disorders), (c) contingency type (interdependent, independent, or dependent), and (d) duration.

Preliminary Data

Data are still being analyzed for the 103 included studies. Data from baseline and intervention phases from each study graph are being extracted using the GetData digitizer program. Preliminary findings reveal a Tau-U value of .82 (.02, CI₉₅=.78 to .86); moderator analyses are being conducted.

Effect Size

Tau-U, a weighted effect size measure based on non-overlap between phases (Parker et al., 2011), is being used. Tau-U is derived from Kendall's Rank Correlation and the Mann-Whitney U test between groups. A fixed effects model will be used, as the studies are all regarded as estimates of an unknown "true" effect size. Variations in the true effect size are being sought through moderator analyses.

Reference

Bowman-Perrott, L., Burke, M. D., & *Zhang, N., *Dong, X., **Odetunde, K., & **Hernandez, A. (in preparation). Examining the effects of group contingencies on problem behaviors and academic performance: A meta-analysis of single-case research. *Graduate **Undergraduate