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FIU College of Education
September 10th Brown Bag seminar:

Type VI Error in Path Analysis, Structural Equation Modeling, and
Hierarchical Linear Modeling

This presentation will introduce the major ideas for these concepts and handouts, that go into more detail, will be distributed. Articles will also be available online at <http://education.fiu.edu/ogs/brownbag.html>.

Power Analysis (based upon Cohen (1988) and McNeil, Newman, & Kelly (1996, pgs. 168-173)

- A. Four parameters
- B. When to do a power analysis and how to interpret it
- C. Really an estimation of Type II Error
- D. Accepting the Null hypothesis within confidence intervals

Introduction to Type VI Error

- A. As it relates to Path Analysis
- B. Structural Equation Modeling (SEM) (multivariate path analysis) as it relates to Type VI Error concerns
 - 1. Sophisticated Ex Post Facto research design
 - 2. “Causal Modeling”?
 - 3. Assumes control for measurement error
 - 4. Based upon Analysis of co-Variance
 - 5. Assumes no interaction
 - 6. Used to test theory
- C. Hierarchical Linear Modeling (HLM) and Type VI Error Concerns
 - 1. Fixed, mixed and randomized design
 - a. Robustness
 - b. Power
 - c. Interaction
 - d. Reflecting questions of interest
 - e. Centering