Title:
Power Analysis for Clustered Designs: A Demonstration of Three Programs

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Symposium Justification

Cluster randomized trials (CRTs) have become a common design in the evaluation of educational programs and practices. A critical component of a CRT is adequate statistical power to detect an effect of a given size. The nested structure of the data in a clustered design makes power analyses for CRTs more complex. The purpose of this symposium is to demonstrate three programs for calculating statistical power and minimum detectable effect sizes for clustered designs: Optimal Design Plus, CRT-Power, and PowerUp! Although the programs share many features, i.e. the ability to calculate power or minimum detectable effect sizes for a variety of nested and blocked designs, each of the programs has unique features that may make a particular program more appropriate for designing different studies. For example, Optimal Design Plus allows the user to access empirical estimates of design parameters including intraclass correlations and R-squares for a variety of math, reading, and early childhood outcomes. CRT-Power allows users to compare the costs of various designs. PowerUp! allows users to calculate the power for a series of non-experimental designs including regression discontinuity designs and interrupted time series designs. The symposium will highlight the unique features of each program and increase awareness in the field of the different programs available for power analyses for CRTs.