Monte Carlo Studies in Methodological Research in Education and Psychology

Presented by Michael Harwell and Nidhi Kohli

Quantitative Methods Program, Department of Educational Psychology, University of Minnesota

Big Ten Online Symposium

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University of Minnesota, Peik Hall Room 155

University of Iowa, Lindquist Center Room N105

University of Nebraska-Lincoln, Avery Room 347

Monte Carlo studies represent an important tool for investigating the behavior of statistical procedures in methodological research (including measurement research) in education and psychology. We first report the results of a survey of Monte Carlo studies published in methodological journals in education and psychology to assess the extent to which these studies have adopted the recommendations of Hoaglin and Andrews (1975) and others. We then synthesize and extend existing literature of suggested practices for planning and executing Monte Carlo studies with a particular focus on research design and analysis of results. The goal is to encourage methodological researchers to fully exploit the strengths of Monte Carlo studies in ways that inform methodological practice and a program of methodological research. Our recommendations are illustrated with real and simulated data.

READING: Harwell, M.R., Stone, C.A., Hsu, T., & Kirisci, L. (1996). Monte Carlo studies in item response theory. *Applied Psychological Measurement*, *20*, 101-125.

**The Big Ten Online Symposium is a series of presentations on advanced measurement and research methods in education. It is sponsored by the Quantitative Foundations of Education Program, Department of Educational Psychology, University of Iowa; the Quantitative Methods in Education Track, Department of Educational Psychology, at the University of Minnesota; and the Quantitative, Qualitative, and Psychometric Methods Program, Department of Educational Psychology, University of Nebraska. In 2014, the Symposium will include three online seminars. For questions, contact Mark L. Davison MLD@UMN.EDU. To be notified of future seminars, contact Sharon Sawyer SAWYE100@UMN.EDU*