

THE NEBRASKA CENTER FOR RESEARCH ON CHILDREN, YOUTH, FAMILIES AND SCHOOLS

Is Pleased to Present the Fall, 2006 Research Methodology Series

The Research Methodology Series is an ongoing effort by the Nebraska Center for Research on Children, Youth, Families and Schools (CYFS) to provide information to social science researchers about important and cutting-edge research methodology and statistical approaches. Series presenters include personnel from the CYFS Statistics and Research Methodology Unit, along with invited guests.

The CYFS Statistics and Research Methodology Unit

The CYFS Statistics and Research Methodology Unit provides support to CYFS Faculty Affiliates in the conceptualization of research designs and methodology and the selection and execution of data analyses. Unit personnel are experienced statisticians who specialize in experimental, quasi-experimental, and correlational design methodology; measurement; and cross-sectional, longitudinal, and correlational data analytic approaches (e.g., regression, analysis of variance, structural equation modeling, growth modeling, hierarchical linear modeling). For more information about CYFS or the CYFS Statistics and Research Methodology Unit, contact the CYFS Center Director, Dr. Susan Sheridan, at ssheridan2@unl.edu.

Michael Toland obtained his master's degree in Quantitative and Qualitative Methods in Education from the University of Nebraska Lincoln in 2002. He is currently a statistics and measurement consultant for the CYFS SRM Unit and Director of the Nebraska Evaluation and Research Center. His research interests involve test development, item response theory, and statistical modeling.

Jim Bovaird received his PhD in Quantitative Psychology from the University of Kansas in 2002. He is currently an Assistant Professor of Quantitative, Qualitative and Psychometric Methods in Educational Psychology at UNL and Co-Director of the CYFS Statistics and Research Methodology Unit for. His research interests involve determining the proper use of latent variable methods—including structural equation modeling, item response theory, and multilevel modeling— and applying these methods to advance substantive research in the social and behavioral sciences.

Kevin Kupzyk received an MA in Quantitative Psychology from the University of Kansas in 2005. He is now a statistics and measurement consultant for the CYFS SRM Unit and a doctoral student in Quantitative, Qualitative, and Psychometric Methods in Educational Psychology at UNL. His research interests include educational measurement, multilevel modeling, and latent variable growth models.

Save the Dates!

January 19, 11:30 – 1:00

February 16, 11:30 – 1:00

April 6, 11:30 – 1:00

April 27, 11:30 – 1:00

Our speaker series will continue in the spring semester. The specific topics will be announced later this semester based on feedback from our affiliates. Look for the SRM Unit Affiliate Survey in October to help guide our offerings.



***Item Response Theory:
Designing Psychometrically Sound Instruments***

Friday, September 22, 11:30 AM - 1:00 PM
242 Mabel Lee Hall
Michael Toland, MS, CYFS Statistics and Measurement Consultant
and Director, NEAR Center

This presentation will discuss how item response theory (IRT) modeling can be used to develop assessments that better match a researcher's intended measurement goals. IRT is a modern test theory approach that allows researchers to express the relationship between a person's response to an item and their standing on a construct (e.g., depression). Two important advantages of IRT modeling are its ability to untangle the confounding of examinee ability with item characteristics and to provide sophisticated information about assessments. These two strengths of IRT represent important advances over classical test theory approaches and have important implications in the development and refinement of assessments.

***Accounting for Contextual Influences:
Multilevel Modeling in Intervention Research***

Friday, October 27, 11:30 AM - 1:00 PM
270 Mabel Lee Hall
Jim Bovaird, PhD, Assistant Professor, Department of Educational Psychology and Co-Director, CYFS Statistics and Research Methodology Unit

Nested data structures are everywhere, including intervention studies. This talk will introduce multilevel modeling (MLM) – often synonymously referred to as hierarchical linear modeling (HLM), mixed modeling, or random coefficients regression – as a means of considering classroom and/or other contextual effects in intervention research. Specific applied examples will be introduced to illustrate the utility of this method. Particular emphasis will be given towards a three-level framework with repeated measures (pre- and post-intervention assessments with follow-up) nested within student, and students nested within classrooms or schools where random assignment to condition typically occurs.

Guidelines for Utilizing Accelerated Designs

Friday, November 17, 11:30 AM - 1:00 PM
242 Mabel Lee Hall
Kevin Kupzyk, MA, CYFS Statistics and Measurement Consultant

Social and behavioral science researchers are often interested in conducting studies on large groups of participants over extended periods of time. An accelerated design, also known as a cohort-sequential design, provides a useful alternative to purely longitudinal and purely cross-sectional designs, in that it can capture both inter- and intra-individual change as well as the predictors of this change. The basic premise of this method is that making a limited number of repeated measurements of cross-sectional groups provides the experimenter with a set of temporally overlapping measurements of adjacent age groups or cohorts. This shortens the amount of time needed to approximate a longitudinal study. Accelerated designs can also be generalized to situations where not all individuals are measured on the same occasions or with the same metric of time, a phenomenon referred to as individually-varying time points. This presentation will provide useful guidelines for designing such studies in the context of intervention research.

***Missing Data:
What It Is and What You Can Do about It***

Friday, December 8, 11:30 AM – 1:00 PM
204 Teachers College Hall
Jim Bovaird, PhD
Michael Toland, MS
Kevin Kupzyk, MA

Despite the use of optimal research designs and experimental control, there are often missing data. Whether gaps in data result from selective non-response, participant attrition, censoring, or even human error, incomplete data can have major implications on the power to test your research hypotheses. This presentation will cover the major modern and historical methods of dealing with missing data, the theoretical mechanisms that are necessary to consider when choosing a missing data procedure, and actual examples of how you can benefit from not using simple list-wise deletion.