

Did You Know? Quantitative Research Methods

National Association for Gifted Children

Research and Evaluation Network

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Hoekstra, R., Johnson, A., & Kiers, H. A. L. (2012). Confidence intervals make a difference: Effects of showing confidence intervals on inferential reasoning. *Educational and Psychological Measurement, 72*, 1039-1052.

Hoekstra, Johnson, and Kiers (2012) propose using confidence intervals (CIs) instead of the singular or combined use of null hypothesis significance testing (NHST). Assessment of Ph.D. students' statistical interpretation of NHST and CI outcomes suggest distinct differences between the assessment and interpretation of NHST versus CIs. First, with NHST, participants were more confident that the results were replicable and that a population effect was present compared to the presentation of CIs. Second, when mean CI's were used, participants made "fewer inferential mistakes, fewer references to significance, and more references to effect sizes" (Hoekstra et al., 2012, p. 1049). Overall, when considering presentation mode, it appears the CIs could improve inferential practice and conclusions.

Reichardt, C. (2011). Evaluating methods for estimating program effects. *American Journal of Evaluation, 32*, 246-272.

The United States Department of Education has established policy for prioritizing funding for randomized experiments over other methods. This article provides a typology for helping

researchers think about conducting a study, which aims to estimate the effects of a program in a quantitatively or qualitatively new way. This typology lists the recipients, the settings, the times, and the outcome variables on the vertical axis and the type of treatment assignment (i.e., random assignment, quantitative, and non-quantitative assignment) across the top. The pros and cons of all 12 types of comparisons (4 dimensions x 3 assignment methods) are discussed. The authors state that several of these research designs have been overlooked in the past, and encourage researchers to rethink the belief that random assignment to a treatment group is the best methodological approach.

Methodological Briefs in *Gifted Child Quarterly*

Adelson, J. L. (2012). Examining relationships and effects in gifted education research: An introduction to structural equation modeling. *Gifted Child Quarterly, 56*, 47-55.

Fan, X., & Nowell, D. L. (2011). Using propensity score matching in educational research. *Gifted Child Quarterly, 55*, 74-79.

Matthews, M. S., Peters, S. J., & Housand, A. M. (2012). Regression discontinuity design in gifted and talented education research. *Gifted Child Quarterly, 56*, 105-112.

McCoach, D. B., Rambo, K. E., Welsh, M. (2013). Assessing

growth of gifted students. *Gifted Child Quarterly, 57*, 56-67.

Simonsen, B., & Little, C. A. (2012). Single-subject research in gifted education. *Gifted Child Quarterly, 55*, 158-162.

Warne, R. T. (2012). Beyond multiple regression: Using commonality analysis to better understand R^2 results. *Gifted Child Quarterly, 55*, 313-318.

Additional Citations from *Gifted Education Journals*

Azano, A., Missett, T. C., Callahan, C. M., Oh, S., Brunner, M., Foster, L. H., & Moon, T. R. (2011). Exploring the relationship between fidelity of implementation and academic achievement in a third-grade gifted curriculum: A mixed-methods study. *Journal of Advanced Academics, 22*, 693-719.

Hailey, E., Callahan, C. M., Azano, A., & Moon, T. R. (2012). An evaluation of test speededness in an assessment for third-grade gifted students. *Journal of Advanced Academics, 23*, 292-304.

Warne, R. T. (2012). History and development of above-level testing of the gifted. *Roeper Review, 34*, 183-193.

Warne, R. T., Lazo, M., Ramos, T., & Ritter, N. (2012). Statistical methods used in gifted education journals, 2006-2010. *Gifted Child Quarterly, 6*, 134-149.