

## **Development and Application of a Multi-dimensional Strategy for Measuring Fidelity of Implementation of a Districtwide Intervention**

- Abstract (100 words maximum)

This symposium describes a multi-dimensional strategy to examine fidelity of implementation in an authentic school district context. An existing large-district peer mentoring program provides an example. The presentation will address development of a logic model to articulate a theory of change; collaborative creation of a data set aligned with essential concepts and research questions; identification of independent, dependent, and covariate variables; issues related to use of big data that include conditioning and transformation of data prior to analysis; operationalization of a strategy to capture fidelity of implementation data from all stakeholders; and ways in which fidelity indicators might be used.

- Description of the activity (250 words maximum)

The proposed symposium includes presenters from a local research alliance who are engaged in a large-scale evaluation of a local school district intervention to foster the success of Black male students. The presentation will showcase a multi-dimensional strategy for measuring fidelity of implementation that could be adapted for any complex intervention. Theory is addressed through description of the creation of a logic model that articulates a theory of change (Frechtling, 2007; Kellogg, 2004; Mason & Barnes, 2007; Weiss, 1997). Data file creation will be described as a collaborative process between the evaluators, program administrators, and database managers that includes identification of essential concepts, alignment of data to research questions, and operationalization of data as independent, dependent, and covariate variables. Issues related to big data are addressed in regard to extraction of data elements from the data warehouse, as well as conditioning and transformation that must occur prior to analysis. Operationalization of a strategy to measure participant-level fidelity of implementation will be modeled using an approach that could be adapted for use with other interventions. Finally, the presentation will also address the ways in which fidelity indicators might be used, including sorting of data, as exclusion criteria, as covariates, to explore interaction between fidelity and other variables, used in a variety of statistical models. As a multidimensional model, fidelity may exist for some stakeholders and not others. The session will end with a question and answer session.

- Goal(s) of the symposium (50 words maximum)

The purpose of this symposium is to describe a multi-dimensional strategy that can be used to examine fidelity of implementation in an authentic school district context. An existing large-district peer mentoring program provides an example.

- Format/agenda of the symposium (e.g., moderator, presentations, Q&A, power point, activities for the audience) (250 words maximum)

The format of the symposium will include a moderator to introduce the presentation and the panelists and to provide background context. Five panelists will address (1) background of the

intervention used as an example, which is currently part of the focus of an ongoing evaluation in a local school district; (2) development of a logic model/theory of action as the foundation for measurement of fidelity of implementation; (3) logistical issues related to extracting a data set from a large data warehouse, including collaboration of all stakeholders, alignment of identification of essential concepts, alignment of data to research questions, operationalization of data as independent, dependent, and covariate variables, as well as conditioning and transforming data prior to analysis; (4) operationalization of a strategy to measure participant-level fidelity of implementation will be modeled using a Fidelity of Implementation Matrix strategy that could be adapted for use with other interventions; and (5) the ways in which fidelity indicators might be used, including sorting of data, as exclusion criteria, as covariates, to explore interaction between fidelity and other variables, used in a variety of statistical models. The moderator will engage the audience and panelists in a question and answer session to end the presentation. PowerPoint will be used to present graphic elements. Handouts will be available.

- Bio from each participant (50 words maximum)

The **Moderator** directs research and strategic initiatives for Foster Care to Success, a national nonprofit organization that works with college-bound foster youth. One of the founding members of SFERA, he is VP of a local research and evaluation corporation. He earned his doctorate in Adult Education and Human Resource Development.

**Panelist 1** is Program Manager for the districtwide peer mentoring program. With nearly 20 years in secondary and higher education, she holds a Bachelor's degree in Psychology, a Master of Science in Counselor Education and an Educational Specialist degree in Educational Leadership, and membership in a number of professional organizations.

**Panelist 2** is Program Professor of Educational Research and Evaluation at the Abraham S. Fischler School of Education at Nova Southeastern University, and active member of the South Florida Education Research Alliance. Her areas of interest include evaluation of programs for at-risk student populations and longitudinal research.

**Panelist 3** is a Research Specialist in the Student Assessment & Research Department at Broward County Public Schools, Florida, and active participant of the South Florida Education Research Alliance. His areas of interest include education intervention effectiveness, decision-making processes, and testing and measurement.

**Panelist 4** is a cognitive psychologist and education researcher with Barry University's Adrian Dominican School of Education and an active member of the South Florida Education Research Alliance. Her areas of interest include community-based research and program evaluation as well as quasi-experimental, and mixed methods designs.

**Panelist 5** is a psychologist, Distinguished Professor Emeritus at The University of Akron, and Adjunct Professor at Florida International University and Andrews University (Michigan). Coauthor of countless books, book chapters, monographs, refereed articles and scholarly

presentations, and methodologist on over 300 dissertations, he specializes in research methodology and evaluation.

- Abstract of each participant's talk or presentation (50 words maximum)

Moderator: The moderator will provide an overview of the symposium presentation, introduce the panelists, provide background on the research alliance and the ongoing district evaluation that provides context for the presentation, and direct the question and answer period at the end of the presentation.

Panelist 1: As part of a districtwide initiative to foster Black male success, Broward County Public Schools implemented a districtwide three-tiered mentoring program. The peer mentoring component serves as the example within which the multi-dimensional strategy for measuring of fidelity of implementation is discussed.

Panelist 2: To set the foundation for establishing a strategy for measuring fidelity of implementation, this component of the session describes elements of the peer mentoring logic model, how the logic model supports the program's theory of change, how we created it, and the purpose it was designed to serve.

Panelist 3: Data file creation is a collaborative process between evaluators, program administrators, and database managers. The process includes identification of essential concepts, alignment of variables to research questions, and operationalization of independent, dependent, and covariate variables. Data elements extracted from the data warehouse require conditioning and appropriate transformation prior to analysis.

Panelist 4: Using Zvoch (2012) as a model, a Fidelity of Implementation Matrix was developed to operationalize a strategy for the multi-dimensional measurement of fidelity of implementation across program components and stakeholders. The logic model and variable list were used to create the peer mentoring Fidelity of Implementation Matrix.

Panelist 5: Fidelity indicators might be used in a number of ways, including sorting data, as exclusion criteria, as covariates, to explore interaction between fidelity and other variables, or use in developing statistical models. Discussion will address how, as a multidimensional model, fidelity may exist for some stakeholders and not others.

## References

- Frechtling, J. A. (2007). *Logic modeling methods in program evaluation*. Jossey-Bass: San Francisco, CA.
- Kellogg Foundation, W. K. (2004). *Using logic models to bring together planning, evaluation, and action: Logic model development guide*. Battle Creek, MI: W. K. Kellogg Foundation.
- Mason, P. & Barnes, M. (2007). Constructing theories of change: Methods and sources. *Evaluation, 13*, 151-170. DOI: 10.1177/1356389007075221
- Weiss, C. H. (1997). Theory-based evaluation: Past, present, and future. *New Directions for Evaluation, 76*, 41-55.
- Zvoch, K. (2012). How does fidelity of implementation matter? Using multilevel models to detect treatment relationships between participant outcomes and the delivery and receipt of treatment. *American Journal of Evaluation, 33*(4), 547-565. DOI: 10.1177/1098214012452715

