Middle School Mathematics Professional Development Study: Findings After the Second Year of Implementation

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Symposium Justification (Background/Context):

This symposium presents the design and results of the Middle School Mathematics Professional Development Impact Study, a large-scale, randomized experiment examining the impact of providing a professional development (PD) program in rational number topics to seventh-grade mathematics teachers. An interim report (Garet et al. 2010) described the findings after one year of PD. The final report, which is the primary focus of this symposium, documents the impact after providing a second year of PD in a subset of the original participating districts and includes supplemental analyses that use data from both years of the study.

The proposed symposium consists of three papers, each focusing on a different aspect of the study. The first paper describes the study design and measures; the second paper describes the PD intervention that was delivered to teachers; and the third paper discusses the impact results.

Given that the methodological and implementation complexities associated with this large-scale, multi-year randomized trial will be highly relevant to SREE participants, and that the final results will be available prior to the September conference, we believe that this project warrants a 2-hour symposium. We have secured a discussant and have planned the symposium to allow for in-depth presentations and discussions focused on the study’s design and measures, PD intervention and final results.

Paper 1: Middle School Mathematics Professional Development Impact Study: Design and Measures (James Taylor, Fran Stancavage and Fred Doolittle)

Purpose / Objective / Research Question / Focus of Study:

This paper describes the design and methodology of the study. The study randomly assigned 77 mid- and high-poverty schools from 12 districts to treatment and control conditions in the first year of implementation and to 39 schools and 6 districts in the second and final year of implementation. Outcome data on teachers and students were collected during both years of the study. The PD was delivered by two provider organizations, each of which worked with half of the participating districts in each year of the study. Seventh-grade teachers in the treatment schools had the opportunity to receive the PD program offered by the study and could also continue to participate in the PD activities that they would have received in the absence of the study. Seventh-grade teachers in the control schools received only the PD that they would have received in the absence of the study.

The interim report (Garet et al. 2010), which will be briefly described and referenced in the proposed symposium, addressed three central research questions:

1. What impact did the PD program provided in this study have on teacher knowledge of rational number topics? Teacher knowledge was measured in the fall and in the spring using a specially constructed teacher knowledge test. The test was designed to measure two constructs aligned with the purpose of the PD program: knowledge of rational numbers content typically taught in seventh grade (common knowledge of mathematics,