What Works Clearinghouse

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WWC Quick Review of the Report "Middle School Mathematics Professional Development Impact Study: Findings After the First Year of Implementation"[1,2]

What is this study about?

The study examined whether 7th-graders' knowledge of rational numbers improved when the students' math teachers participated in related professional development activities.

The study analyzed data on about 4,500 students and 200 teachers from approximately 80 schools in 12 districts during the 2007–08 academic year.

Half the schools within each district were randomly assigned to offer 7th-grade math teachers professional development on the teaching of rational numbers. Teachers in all schools were allowed to continue participating in existing professional development programs.

Student-level math achievement was measured by a computer-adaptive rational number test developed by the Northwest Evaluation Association. Teacher-level topical knowledge was measured by a rational number test created by the study's authors. Teachers' instructional practices were measured by classroom observations.

The study measured the effects of professional development by comparing outcomes at the end of the academic year in schools that were offered professional development provided by the study with outcomes in schools that did not.

Features of Professional Development for Middle School Math Teachers

A total of eight 6-hour sessions of instruction on pedagogy, content knowledge, and resource materials were provided, three during a summer institute and five during school-year seminars.

In the weeks following each of the five seminars, a total of 20 hours of classroom coaching were provided by a facilitator to assist teachers in applying new strategies.

Professional development was administered by either America's Choice or Pearson Achievement Solutions.

What did the study authors report?

The study found that students in schools where teachers were offered extensive professional development by the study performed no better on a test of math achievement in rational numbers than students in comparison schools at the end of the 2007–08 academic year.

Further, the study found the professional development had no impact on teacher knowledge of rational number topics and on how to teach them.

(continued)

[1] Garet, M., Wayne, A., Stancavage, F., Taylor, J., Walters, K., Song, M., et al. Doolittle, F. (2010). *Middle School Mathematics Professional Development Impact Study: Findings after the first year of implementation* (NCEE 2010-4009). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

[2] Absence of conflict of interest: This study was conducted in part by staff from American Institutes for Research (AIR), which is a subcontractor to Mathematica on the WWC. For this reason, no AIR staff participated in the review of this study or in the development of this quick review.

However, the study found a significant positive impact of the professional development on one of the three measures of teacher instructional practices examined. Teachers who were offered the study's extensive professional development engaged in 1.03 more activities per hour that elicited student thinking than teachers not offered the study's professional development.

WWC Rating

The research described in this report is consistent with WWC evidence standards

Strengths: The study was a well-implemented randomized controlled trial.