What Works Clearinghouse

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

What is this study about?

The study examined whether a professional development program for seventh grade mathematics teachers improved the teachers' knowledge of rational number topics and the performance of their students on a rational number test.

Before the first year of the program, schools within districts were randomly assigned to either a treatment group that offered the professional development program in rational number topics to all seventh grade mathematics teachers or to a control group that did not offer the program.

The study analyzed data collected at the end of the second year of implementation of the professional development program. Eighty-nine teachers and about 2,100 students from 39 schools in six largely urban school districts were included. An additional six school districts participated in a study of the first year of the program but were dropped from the study during the second year because of resource constraints.[2]

The study measured teacher knowledge and student achievement with rational numbers tests developed specifically for this study. It assessed the effectiveness of the professional development program by comparing outcomes of teachers and students at treatment schools with outcomes of teachers and students at control schools.

Features of the Professional Development Program in Rational Numbers

The professional development program, provided by America's Choice or Pearson Achievement Solutions, was designed to improve teachers' ability to teach rational numbers—particularly fractions, decimals, ratios, rates, proportions, and percents.

It emphasized the underlying properties of rational numbers, the use of number lines, and the development of a teacher's ability to explain rational numbers and to identify and address student misconceptions.

During the first year of implementation, the professional development included 18 hours in a summer institute, 30 hours of follow-up seminars, and 20 hours of in-school coaching visits. During the second year, it included 12 hours in the summer institute, 18 hours of follow-up seminars, and 16 hours of in-school coaching visits.

Because of the study design, teachers at the treatment schools received varying doses of professional development; about half of the teachers received both years of professional development, and the other half received only one year.

(continued)

[1] Garet, M., Wayne, A., Stancavage, F., Taylor, J., Eaton, M., Walters, K., Song, M., Brown, S., Hurlburt, S., Zhu, P., Sepanik, S., & Doolittle, F. (2011). *Middle school mathematics professional development impact study: Findings after the second year of implementation* (NCEE 2011-4024). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

[2] An earlier report focused on findings after the first year of implementation: *Middle school mathematics professional development impact study: Findings after the first year of implementation* (NCEE 2010-4009). The WWC rated that study in an earlier quick review (it can be found at: http://ies.ed.gov/ncee/wwc/quickreviewsum.aspx?sid=154).

What did the study find?

The study found no statistically significant difference in teacher knowledge of rational numbers or student achievement between treatment and control schools.

WWC Rating

The research described in this report meets WWC evidence standards

Strengths: The study is a well-executed randomized controlled trial with low attrition.