

What Works Clearinghouse

Brief Study Report

IES



Reviewed Study: Ridgway, J. E., Zawojewski, J. S., Hoover, M. N., & Lambdin, D. V. (2002). Student attainment in Connected Mathematics curriculum. In S. L. Senk & D. R. Thompson (Eds.), *Standards-based school mathematics curricula: What they are? What do students learn?* Mahwah, NJ: Lawrence Erlbaum Associates.

Hoover, M. N., Zawojewski, J. S., & Ridgway, J. (1997, April). Effects of the Connected Mathematics Project on Student Achievement. Paper presented at the Annual Meeting of American Education Research Association, Chicago, IL.

WWC Study Reports are intended to support decision making; neither the What Works Clearinghouse (WWC) nor the U.S. Department of Education endorses any interventions. No single Study Report should be used as a basis for making policy decisions because (1) few studies are designed and implemented flawlessly and (2) all studies are tested on a limited number of participants, using a limited number of outcomes, at a limited number of times, so generalizing from one study to any context is very difficult. To highlight these issues, the WWC Study Reports describe in detail the specifics of each study, focusing primarily on studies that provide the best evidence of effects (randomized controlled trials). Systematic reviews of the evidence will be conducted to summarize the results of the individual studies.

See the WWC [Detailed Study Report \(PDF\)](#) for more information about this study.

Topic:	Curriculum-Based Interventions for Increasing K–12 Math Achievement—Middle School
Intervention:	Connected Mathematics Project
Research Design:	Quasi-Experimental Design with Matching
Study Rating:	
Date Released:	November 15, 2004
Summary of Results:	Ridgway et al. found mixed results, depending on the assessment test used. With the Balanced Assessment (BA) test, positive significant differences were found between the Connected Mathematics Project (CMP) students and non-CMP students in grades 6, 7, and 8. The results for the Iowa Test of Basic Skills (ITBS) were less favorable in the CMP group, with results ranging from negative significance in 6th grade to nonsignificance in the 7th and 8th grades. Since the analysis was done at the student level while the level of intervention assignment was done at the classroom or school level, caution should be used in interpreting the results.



= Meets Evidence Standards



= Meets Evidence Standards with Reservations



= Does Not Meet Evidence Standards

The What Works Clearinghouse (www.whatworks.ed.gov) was established in 2002 by the [U.S. Department of Education's Institute of Education Sciences](#) to provide educators, policymakers, researchers, and the public with a central and trusted source of scientific evidence of what works in education. Please email all questions and comments to info@whatworks.ed.gov. The What Works Clearinghouse is administered by the U.S. Department of Education through a contract to a joint venture of the [American Institutes for Research](#) and the [Campbell Collaboration](#).

What Is This Report About?

The Connected Mathematics Project (CMP) is a comprehensive middle school mathematics curriculum developed for grades 6 through 8. It is reported to align with the National Council of Teachers for Mathematics (NCTM) standards. This report reviews a study of the effect of the CMP curriculum on students' mathematics achievement on the Iowa Test of Basic Skills (ITBS) and the Balanced Assessment (BA) test. This report summarizes the study and reviews its strengths and weaknesses.

How Was the Study Conducted?

Ridgway et al. and Hoover et al. compare the mathematics performance of students in the CMP schools with the non-CMP schools on two achievement assessments. One is a norm-referenced, standardized test (ITBS); the other is a constructed-response items test developed collaboratively by the BA project team and the CMP team so that the test aligns with NCTM standards.

Ridgway et al. and Hoover et al. do not mention how the intervention group was selected, except to note that the CMP curriculum had to be used

How Can You Find Out More?

- To learn more about this study, read the [detailed report \(PDF\)](#).
- See reports on other studies of [Middle School Math curricula](#).
- See reports on other studies of the [Connected Mathematics Project](#).
- Cost information is available at the publisher's website: www.phschool.com/math/cmp/index.html
- Intervention Developer Contact Information: Contact the local Prentice Hall Sales Representative at the general number 1-800-848-9500; or contact CMP at 517-432-2820 or visit the website www.math.msu.edu/cmp/index.html.

throughout the year in the intervention group. Ridgway et al. report that no data exist on what traditional textbook series were used by the comparison schools. The CMP and the non-CMP schools are reported to be matched as much as possible on geographical location, student population diversity, and student ability grouping. Selection of the comparison group was either at the school level or at the classroom level. If the CMP curriculum was implemented in the whole district, comparable schools were located. Otherwise, comparable comparison classes were selected locally.

What Did the Study Find?

The results were mixed depending on the test—the ITBS or the BA test. On the ITBS, Ridgway et al. and Hoover et al. found a statistically significant negative effect of the CMP in the 6th grade. Comparison group students' scores gained more than the CMP students. In the 7th and 8th grades, the results were nonsignificant.

For the BA assessment, there was a positive statistically significant effect in grades 6, 7, and 8, even after controlling for pretest differences. The CMP students gained differentially more than the non-CMP students.

Report Production

Date created: November 15, 2004

Topic area reviewed under: Curriculum-Based Interventions for Increasing K–12 Math Achievement—Middle School

WWC Study Ratings^a: Ridgway et al. (2002)

Causal Validity: Meets WWC Standards with Reservations^a, a Quasi-Experimental Design with Matching

Participants in the intervention group and the comparison group were matched as much as possible on geographic location, student population diversity, and student ability grouping. There were significant differences between the groups on a pretest of the Iowa Test of Basic Skills (ITBS) and the Balanced Assessment (BA) test, but the authors controlled for the differences in the BA test by using the ITBS pretest scores in the analysis. No attrition occurred at the school level, and no extraneous events were identified that appeared to confound the intervention's effect.

Other Study Characteristics	Study Rating	Study-Specific Information
Intervention Fidelity	●	The Connected Mathematics Project (CMP) intervention is well defined and replicable. It meets the definition for middle school math. However, Ridgway et al. and Hoover et al. do not provide further information about the implementation of the curriculum beyond its description.
Outcome Measures	●●	The outcome measures (ITBS and BA) appear to be appropriately aligned and have acceptable reliability, according to WWC standards.
People, Settings, and Timing	●	Although Ridgway et al. and Hoover et al. report that they matched intervention and comparison groups on geographical location, student population diversity, and student ability grouping, they do not report on the variation of these characteristics in the sample. The outcome measures were measured in April, before the end of the school year.
Testing within Subgroups	●	The intervention effect is tested across the entire sample but not within important subgroups.
Analysis	●	The results were analyzed at the student level and this does not match the unit of intervention delivery, which is either at the school or classroom level.
Statistical Reporting	●	The statistical properties of the data do not allow for valid estimates of effect sizes due to the mismatch between the unit of assignment and the unit of analysis.

Note. ●● Fully meets criteria; ● Meets minimum criteria; ✕ Does not meet criteria.

^a For more information on the criteria used to rate this study, see the WWC Evidence Standards: [Middle-School Math](#).