What Works Clearinghouse

Brief Study Report

Reviewed Study: **Kerstyn, C. (2001). *Evaluation of the I CAN LEARN Mathematics Classroom. First Year of Implementation (2000–2001 school year).* Unpublished manuscript.**

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 extend the results of the individual studies.

Topic:	Curriculum-Based Interventions for Increasing K–12 Math Achievement—Middle School
Intervention:	I Can Learn
Research Design:	Quasi-Experimental Design with Matching
Study Rating:	
Date Released:	June 30, 2004

= Meets Evidence Standards = Meets Evidence Standards with Reservations = Does Not Meet Evidence Standards

What Is This Report About?

I Can Learn Algebra (ICL) is a standards-based math curriculum for use in grades 7 through 10 that was developed by New Orleans-based JRL Enterprises. ICL provides self-paced, interactive, computerized lessons and frequent assessments to track student progress. This Brief WWC Study Report reviews a study of the effects of ICL students' achievement on 8th-grade mathematics. This report summarizes the study and reviews its strengths and weaknesses. A more detailed, technical version of this study report is available here (PDF).

How Was the Study Conducted?

Kerstyn compared the performance of 59 classrooms using ICL with classrooms using other, traditional mathematics curricula. The 59 classrooms in each group were matched on the basis of course level (prealgebra and algebra), instructional time, prior achievement, class size, proportion of minority students, and time of day.

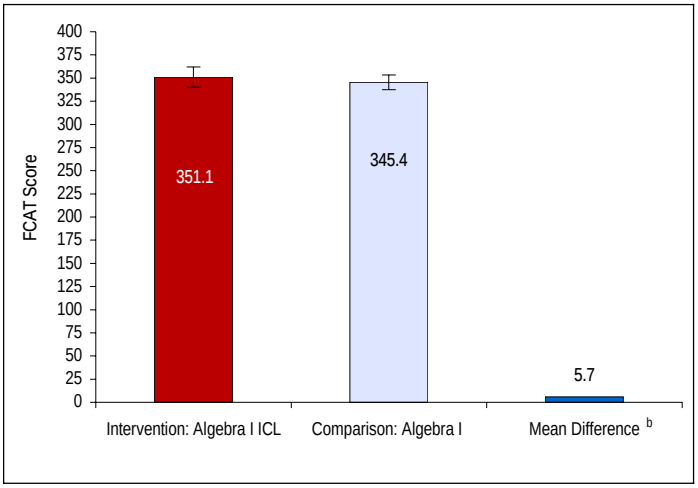
Eight pairs of Algebra I classes, eight pairs of Algebra I Honors classes, 10 pairs of MJ-3 advanced (Advanced Prealgebra) classes, and 33 pairs of MJ-3 (Prealgebra) classes resulted from the matching. The MJ-3 course is the regular 8th-grade mathematics course, whereas MJ-3 advanced, Algebra I, and Algebra I Honors are advanced 8th-grade mathematics courses.

Students in each group were assessed at the end of the first semester and at the end of the school year, with both district-constructed end-of-semester examinations and state-adopted standardized tests. This report includes only results for the state-adopted standardized test, the Florida Comprehensive Assessment Test (FCAT), and one of the end-of-semester exams, the MJ-3 Cumulative Test, because these were the only two tests with available reliability information.

What Did the Study Find?

The WWC found that students in the study who participated in ICL did not perform significantly better or worse than students in the control group on the FCAT or the MJ-3 Cumulative Test. (See Figures 2a–2e.) In this study, natural student groupings (classrooms, schools, etc.) may have affected findings. Although the author's analysis does not address this grouping problem, the author does not report significant positive findings, so the impact of groupings on findings is likely minimal.

Figure 2a. Impact Calculated by Kerstyn (2001):[a] Algebra I

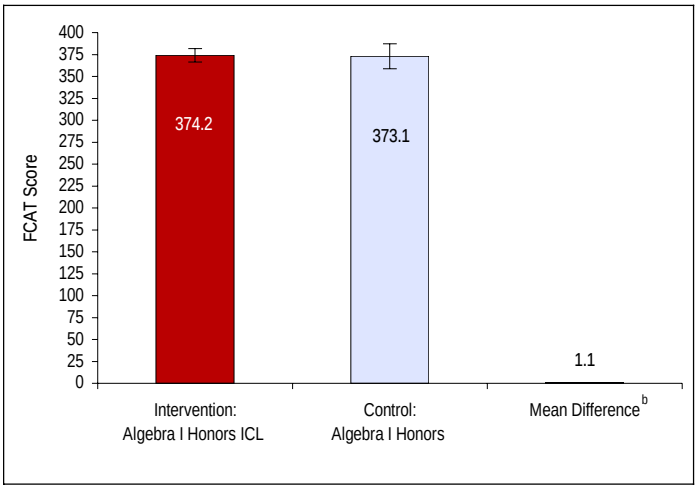


Note. FCAT = Florida Comprehensive Assessment Test.

[a] Confidence intervals were computed by the WWC.

[b] The intervention group scores were not significantly different from the control group scores.

Figure 2b. Impact Calculated by Kerstyn (2001):[a] Algebra I Honors

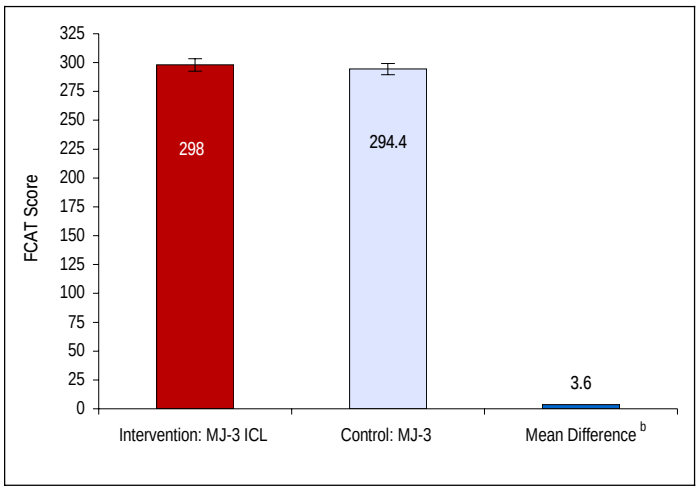


Note. FCAT = Florida Comprehensive Assessment Test.

[a] Confidence intervals were computed by the WWC.

[b] The intervention group scores were not significantly different from the control group scores.

Figure 2c. Impact Calculated by Kerstyn (2001):[a] MJ-3

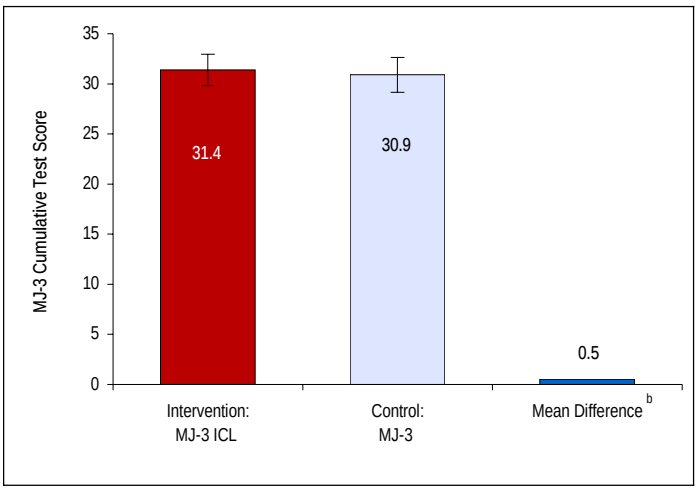


Note. FCAT = Florida Comprehensive Assessment Test.

[a] Confidence intervals were computed by the WWC.

[b] The intervention group scores were not significantly different from the control group scores.

Figure 2d. Impact Calculated by Kerstyn (2001):[a] MJ-3

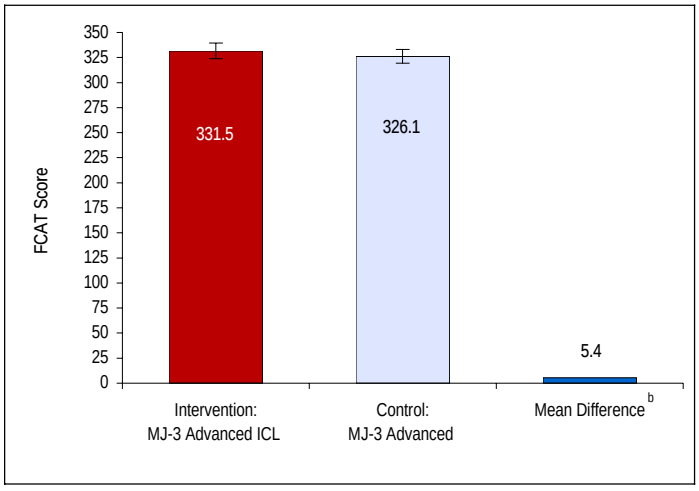


Note. MJ-3 Cumulative Test.

[a] Confidence intervals were computed by the WWC.

[b] The intervention group scores were not significantly different from the control group scores.

Figure 2e. Impact Calculated by Kerstyn (2001):[a] MJ-3 Advanced



Note. FCAT = Florida Comprehensive Assessment Test.

[a] Confidence intervals were computed by the WWC.

[b] The intervention group scores were not significantly different from the control group scores.

WWC Study Ratings[a]
Kerstyn (2001)

Causal Validity: Meets WWC Evidence Standards with Reservations, a Quasi-experimental Design with Matching

Participants in the intervention group were matched on several relevant variables to similar participants in the control group. There were no significant differences between groups on a pretest of mathematics achievement. There was minimal attrition (one classroom and its matched control were dropped because of a midyear change in curriculum), and no extraneous events were identified that appeared to be confounded with the intervention's effect.

Other Study Characteristics	Study Rating	Study-Specific Information
Intervention Fidelity	●	Although the intervention is well-defined and replicable, there is evidence that teachers differed substantially in their degree of curriculum implementation.
Outcome Measures	●●	The Florida Comprehensive Achievement Test (FCAT) and the MJ-3 Cumulative Test are outcome measures that appeared to be appropriately aligned and had acceptable reliability.
People, Settings, and Timing	●	Although some important characteristics of targets are represented in the sample, many important targets are not. The sample of students was part of the identified target population, but it included variation on only some important student characteristics that are the target of Middle School Math, namely, gender, race, and socioeconomic status.
Testing within Subgroups	●	The intervention effect was tested across the entire sample but not within important subgroups, except for tracking where separate effect sizes can be calculated within the different tracks.
Analysis	●	The unit of assignment (class) was the same as the units of analysis and intervention delivery. In this study, natural student groupings (classrooms, schools, etc.) may have affected findings. Although the author's analysis does not address this grouping problem, the author does not report significant positive findings, so the impact of groupings on findings is likely minimal. The statistical properties of the data allowed for valid estimates of the effect sizes. However, the sample sizes at the class level were not adequate to allow for sufficiently precise estimates of the effect size.
Statistical Reporting	●●	The statistical tests were adequately reported, and effect sizes could be estimated for the outcome measure of interest.

Summary of Results

There were no statistically significant differences between the intervention and control groups on the two target outcome measures analyzed in this report. Potential differences between the groups may have been diminished because of the variability of the ICL implementation.

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

[a] For more information on the criteria used to rate this study, see the WWC Study Review Standards.

How Can You Find Out More?

- **To learn more about this study**, read the detailed report (PDF) or the original study (PDF).
- **To see reports on other studies of I Can Learn.**
- **Cost information**: not available.
- **Intervention developer contact information:**
  JRL Enterprises, Inc.
  3520 General DeGaulle Drive, Suite 1100
  New Orleans, LA 70114
  (504) 263-1380

Report Production

Date created: June 30, 2004

- The study was reviewed under one topic area: the first of three waves (middle, elementary, and high school) under the Curriculum-Based Interventions for Increasing K–12 Math Achievement.