What Works Clearinghouse

Brief Study Report

Reviewed Study: **Brooks, C. (1999, August). *Evaluation of Jefferson Parish Technology Grant: I CAN Learn® Algebra I.* Unpublished report submitted to the Superintendent of Jefferson Parish Public Schools.**

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:	I CAN Learn®
Research Design:	Quasi-Experimental Design with Statistical Equating
Study Rating:	✓
Date Released:	October 28, 2004
Summary of Results:	Brooks (1999) compared algebra achievement of students enrolled in the intervention group (I CAN Learn® classes) to that of students enrolled in the comparison group (traditional classes) at pretest, midyear, and posttest. Brooks found that students in the I CAN Learn® classes achieved higher scores in algebra than students in traditional classes at both midyear and posttest, and the difference was statistically significant. The results should be viewed with caution because the unit of analysis (student) does not match the unit of assignment (classrooms).

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

What Is This Report About?

I CAN Learn® Algebra, a standards-based math curriculum for use in grades 7–10, was developed by New Orleans-based JRL Enterprises. I CAN Learn® provides self-paced, interactive, computerized lessons and frequent assessments to track student progress. This report reviews a study of the effects of I CAN Learn® on time-on-task and algebra achievement of children in grades 7–10. This report summarizes the study and reviews its strengths and weaknesses.

How Was the Study Conducted?

Brooks (1999) compared 102 classes using I CAN Learn® (intervention group) with 67 classes using a traditional curriculum (comparison group) in 21 schools in five school districts or parishes in Louisiana. Brooks attempted to equate groups by balancing honors, gifted, and remedial classes. Brooks also statistically equated groups by using students' pretest scores in the analyses.

Students in each group were compared on three outcome measures: time-on-task, algebra achievement, and the Louisiana Educational Assessment Program (LEAP). The WWC reviewed only evidence related to student performance on the algebra achievement test because (1) time-on-task is not an achievement outcome, and (2) the LEAP did not align well with the I CAN Learn® curriculum.

What Did the Study Find?

Brooks found that students in the I CAN Learn® classrooms performed significantly better than students in traditional classrooms at midyear and posttest.

There is a mismatch between the unit of assignment (classroom) and the unit of analysis (student). This poses two issues. First, the results should be viewed with caution because of possible dependency issues. Second, the WWC is unable to determine if attrition occurred at the classroom level, but attrition did occur at the student level.

How Can You Find Out More?

- **To learn more about this study, read the** detailed report (PDF).
- **See reports on** other studies of I CAN Learn®.
- **See reports on** other studies of Middle School Math curricula.
- **Cost information:** not reported.
- **Intervention Developer Contact:**

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Report Production

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WWC Study Ratings[a]: Brooks (1999)

Causal Validity: Meets WWC Standards with Reservations, Quasi-Experimental Design with Statistical Equating

Students in the intervention group (I CAN Learn® classes) were compared to students in the comparison group (traditional classes). Brooks attempted to equate groups by balancing honors, gifted, and remedial classes. Students were pretested on algebra achievement, and Brooks used these scores in the analyses. There did not appear to be attrition of classrooms from the sample, but Brooks does not specifically address whether attrition occurred. No extraneous events were identified that appeared to confound the intervention's effect. However, it is likely that teachers and students knew they were in the intervention group because the curriculum is different from that traditionally implemented in the classrooms.

Other Study Characteristics	Study Rating	Study-Specific Information
Intervention Fidelity	●	The I CAN Learn® intervention meets the definition of Middle School Math. However, Brooks does not provide any information about the implementation of the program beyond program description. There was no measure of teachers' implementation of I CAN Learn®.
Outcome Measures	●●	Although two achievement measures were reported in the study, only the algebra achievement measure is assessed in this report. The algebra achievement measure is properly aligned to the curriculum and has adequate reliability.
People, Settings, and Timing	●	The sample of students is part of the identified middle school math population. However, it included variation on only a few important student characteristics, including grade and student ability. The targeted outcome measure was implemented at a time appropriate to capture the effect of the intervention, but the specific content and skills that the achievement measure assesses were not reported.
Testing within Subgroups	●	The effect of I CAN Learn® on students' algebra achievement was tested across the entire sample, but the effect was not tested within subgroups of the sample or variations across settings.
Analysis	●	The unit of assignment (classroom) was not the same as the unit of analysis (student). Brooks does not report the correct sample sizes to allow for estimates of effect sizes.
Statistical Reporting	●	The statistical tests are adequately reported, but they are reported at the level of the student. Effect sizes for the outcome of interest could be calculated using a standard formula if means, standard deviations, and sample sizes were reported at the level of the classroom.

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 Evidence Standards: Middle School Math