The Study’s Research Questions

- What are the relative effects of different early elementary school math curricula on student math achievement in disadvantaged schools?

- Do the relative effects vary for students in different instructional settings?
Study Design

- Used a competitive process to select 4 curricula with different approaches to teaching math
- Recruited 110 schools in 12 districts
- Set up a school-level randomized controlled trial in each participating district
The Curricula

- Investigations in Number, Data, and Space
- Math Expressions
- Saxon Math
- Scott Foresman-Addison Wesley Math
Evaluation Data

- **Student data**
  - ECLS-K math test administered in the fall and spring
  - demographics from school records

- **Teacher data**
  - math test administered before training began
  - fall and spring surveys

- **School data from public-use files**
Summary of Implementation Findings

- All teachers received training on their assigned curriculum
  - Total training varied by curriculum, ranging from an average of 1.4 to 3.9 days

- Nearly all teachers reported using their assigned curriculum as their core

- About a third reported supplementing
Teachers reported implementing a majority of the curriculum features in the recommended way.

On average, Saxon teachers reported spending one more hour on math instruction per week than the other three curricula.

Content coverage varied in 8 of 20 areas.
HLM techniques used to estimate effects

- 3 level model with:
  - 7 student characteristics (including fall achievement)
  - 8 teacher/classroom characteristics
  - 3 school characteristics (including assigned curriculum)

- Only results that are statistically significant at the 5 percent level of confidence are discussed
HLM Results

- **Math Expressions**
- **Saxon**
- **SFAW**

Average Scale Score (std dev)

- Investigations: 4.75
- Math Expressions: 5.5
- Saxon: 5.25
- SFAW: 5.75

Curriculum: Investigations, Math Expressions, Saxon, SFAW
Main Findings

- For a student at the 50th percentile, the student's rank would be 9 to 12 points higher if the school used Math Expressions or Saxon, instead of Investigations or SFAW.

- 8 of the 15 subgroup analyses found statistically significant differences in student math achievement between the curricula.
  - All of the significant differences favored Math Expressions or Saxon over Investigations or SFAW.
Next Steps

- Two additional reports are planned
  - Next report will present results for all 110 study schools, for both 1st and 2nd grades
  - The last report will present results for 3rd grade, and results for students and teachers that participated multiple years
- Look into factors that may be driving the results
Suggestions for Future Research

- Examine factors that account for the curriculum differences
- Examine the relative effects of the curricula on other measures of math achievement
- Compare the effects of the curricula in this study to other curricula
- Compare the costs of the curricula
- Examine these issues in other districts
What do you suggest for future research?

- On which aspects of the study would you like more information?
- What aspects of this study are most useful to you?
- What aspects of math education would benefit most from additional research?
For More Information

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