Impacts of a Virtual Tutoring Model to Support Elementary Math Skills

Fall 2024 - Spring 2025

Background

- The 2024 National Assessment of Educational Progress showed that 4th and 8th grade math scores still haven't recovered to pre-pandemic levels.
- There is a lot of evidence showing in-person tutoring is effective, but virtual tutoring is less studied.

Cignition Model

Virtual math tutoring
High dosage (50+ hours)
Small group (≤ 4)

30 minutes
4x per week
25+ weeks

- Tutoring by certified teachers for students below grade level
- Inquiry-based style of teaching
- Hands-on and visually rich activities
- Use of virtual whiteboards to practice problems
- Classroom teachers can see tutors' session notes about student progress

Study Design

Research Question:
What is the impact of access to Cignition's virtual small-group math tutoring on math achievement for upper elementary students?

- 2024-2025 academic year
- 4 schools (US Midwest and Northeast), 3 in-person and 1 virtual
- Students in grades 3-6 below grade level in math at the start of the school year
- Randomly assigned 236 students (52%) to receive virtual tutoring (treatment group); 226 students (48%) received normal instruction (control group)

Key Findings

- Being assigned to Cignition tutoring has a small positive (but not statistically significant) effect on math performance.
- Only 27% of the treatment group met the program attendance goal with at least 50 hours of tutoring received; the overall average dosage was 35.9 hours.
- However, in one site (N=31) that had 93% of students reach 50 hours, being assigned to Cignition had a statistically significant positive impact (effect size of 0.49 standard deviations).
- Treatment students received ~35 more minutes of total math instruction per week than the control students, but received less dedicated time from teachers at their school.

With support from Accelerate