

Effectiveness of Selected Supplemental Reading Comprehension Interventions: Impacts on a First Cohort of Fifth-Grade Students

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Presentation Overview

- Research questions
- Study design and impact estimation methods
- Teacher practices
- Impacts on student test scores

Research Questions

- **What is the impact of the interventions on reading comprehension?**
- **How are impacts related to student characteristics, school conditions, and teacher practices?**

Study Design and Impact Estimation Methods

Four Curricula Examined

- **CRISS (Project CRISS)**
- **ReadAbout (Scholastic)**
- **Read for Real (Zaner-Bloser and Chapman University)**
- **Reading for Knowledge (Success for All Foundation)**

- **Key features:**
 - **Supplement the core reading curriculum**
 - **Teach strategies for improving comprehension**
 - **Daily lessons of roughly 30-45 minutes**

Study Sample

- Targeted geographically diverse districts with Title I schools
- Study includes:
 - 10 districts
 - 89 schools in those districts
 - 4-16 schools per district
 - 268 teachers
 - 6,350 students

Random Assignment

- In each district, multiple interventions were tested
- Schools were randomly assigned to one of four curricula or to the control group
- Results of random assignment:
 - CRISS and ReadAbout – 17 schools
 - Read for Real – 16 schools
 - Reading for Knowledge – 18 schools
 - Control – 21 schools

Data Collection

- **Baseline:**
 - **Student assessments: GRADE, TOSCRF**
 - **Teacher survey**
- **Followup:**
 - **Student assessments:**
 - **GRADE**
 - **ETS science comprehension**
 - **ETS social studies comprehension**
 - **School information forms**
 - **Student records**
- **Classroom observations**

Impacts Estimated

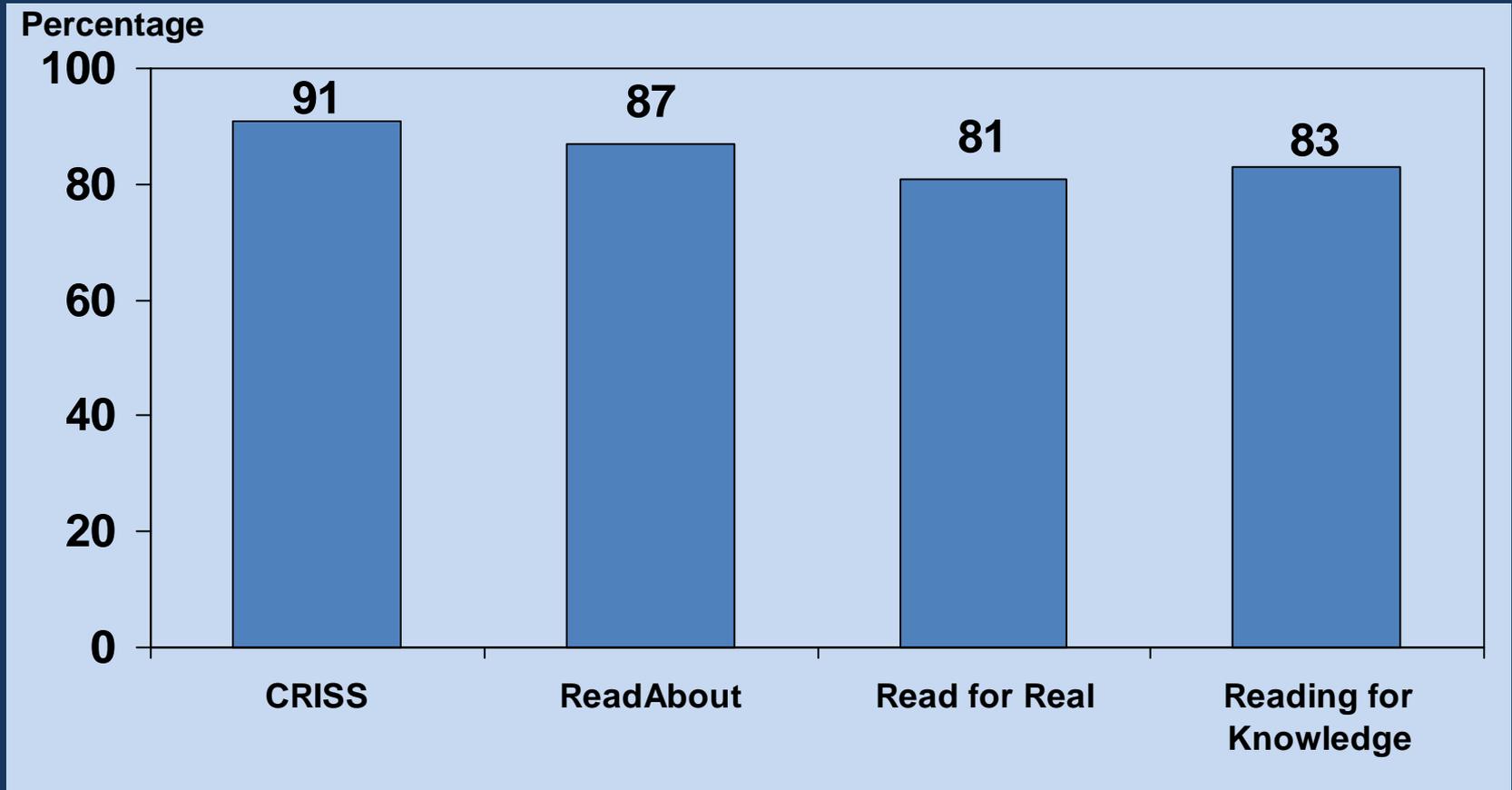
- **Compared student outcomes of:**
 - Each treatment group to the control group
 - Combined treatment group to the control group
 - Each treatment group to other treatment groups
- **Estimated impacts for overall sample and for subgroups defined by student, teacher, and school characteristics**
- **Estimated impacts on each student assessment and composite score**

Method for Estimating Impacts

- **Accounts for:**
 - **Within-district random assignment of schools**
 - **Clustering of students within schools**
 - **Multiple comparisons**
- **Includes the following covariates:**
 - **Student: test scores, ELL status, race/ethnicity**
 - **Teacher: race**
 - **School: urbanicity**
- **Weights account for missing follow-up test scores**

Teacher Practices

81-91 Percent of Teachers Reported Using the Interventions



Observations Examined Teacher Practices

- **Teachers observed for at least 1 day**
- **“Fidelity” observations**
 - Conducted only in treatment group classrooms
 - Assessed teachers’ adherence to key intervention practices
 - Study team identified key practices
 - Developers reviewed for accuracy
- **“Quality of instruction” observations**
 - Conducted in treatment and control group classrooms
 - Allows for examination of correlation between impacts and teacher practices
 - Conducted whenever teachers used informational text

Observed Teacher Adherence to Implementation Components

Percentage

100

80

60

40

20

0

78

71

61

62

CRISS

ReadAbout

Read for Real

Reading for Knowledge

Scales Developed Based on “Quality of Instruction” Observation Data

- Scales based on average number of times teachers engaged in behaviors during an observation interval
- Used exploratory factor analysis to develop groupings of items
- 3 scales were created:
 - Traditional interaction (13 items)
 - Reading strategy guidance (11 items)
 - Classroom management (4 items)

Treatment/Control Differences in Teacher Practice Scales

Effect Size Units



■ Traditional Interaction ■ Reading Strategy Guidance ■ Classroom Management

* Statistically different at the .05 level

Impacts on Student Test Scores

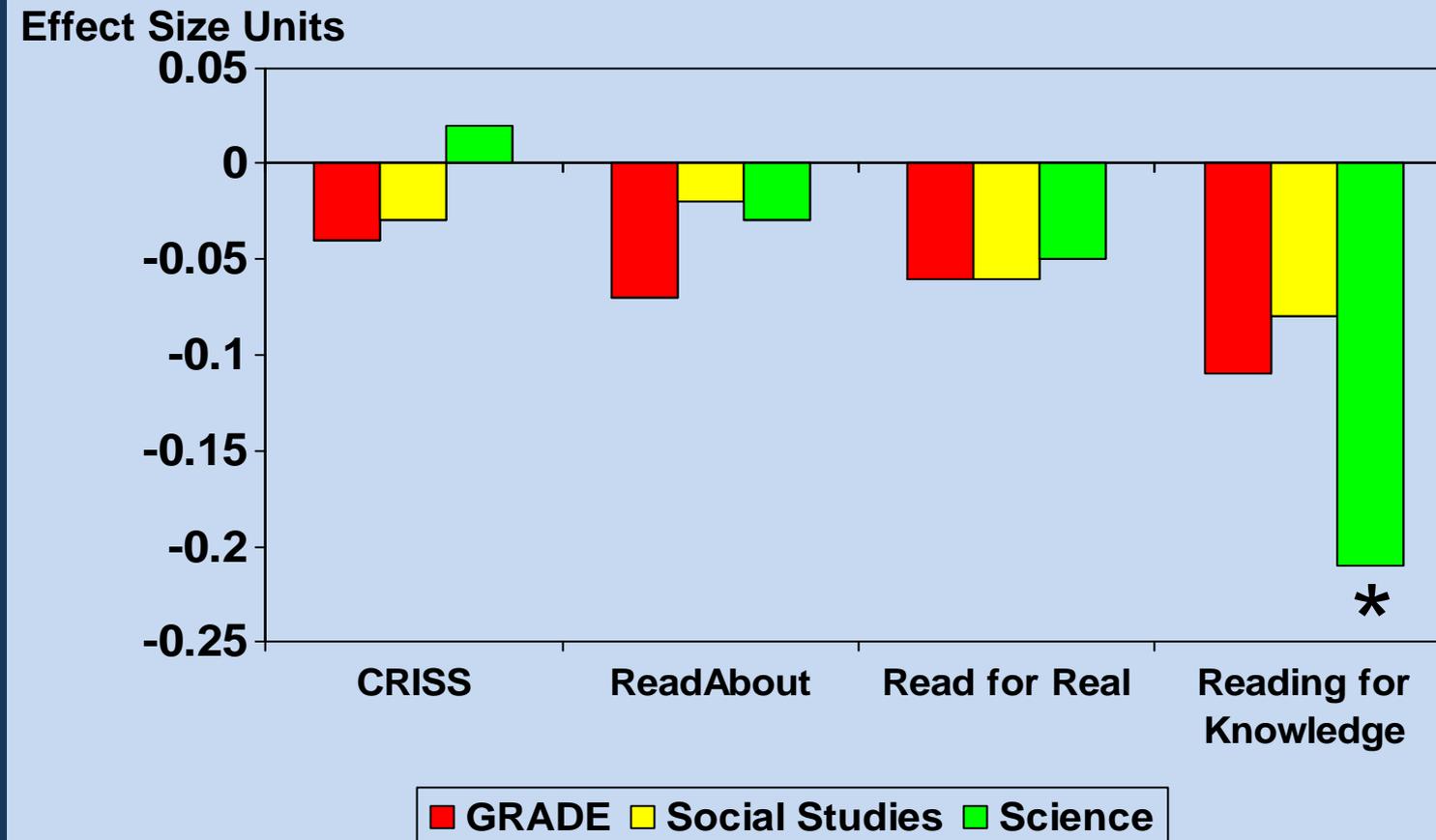
Treatment and Control Groups Were Similar

- Examined 6 teacher, 7 school, and 12 student characteristics
- Groups statistically similar on 24 of 25 characteristics
- One statistically significant difference – teacher age

No Positive Impacts Overall

- No statistically significant, positive impacts on any of the three test scores
- One of 12 impacts was statistically significant (negative impact of Reading for Knowledge on science comprehension test)
- Pattern of impacts unchanged when:
 - Covariates dropped
 - Other multiple comparison adjustments were made
 - Weights accounting for missing test scores at follow up were omitted

Impacts on Test Scores



* Statistically different at the .05 level

Examination of Subgroup Impacts

- **Estimated impacts for subgroups of students based on:**
 - 3 student characteristics
 - 3 teacher characteristics
 - 3 school characteristics
- **Negative impact of Reading for Knowledge on science comprehension test for students taught by teachers with more than 10 years experience**

Treatment/Control Differences in Test Scores Correlated with Teacher Practices

- Compared students in treatment and control groups for classrooms characterized by different scores on three teacher practice scales
- For classrooms with below-average Reading Strategy Guidance scores:
 - Students in Reading for Knowledge schools have lower composite test scores than students in control schools
- For classrooms with below-average Classroom Management scores:
 - Students in Read for Real schools have lower composite and social studies scores than students in control schools