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**HAMILTON**  
PROJECT

**STRENGTHENING STUDENT LEARNING  
THROUGH INNOVATION & FLEXIBILITY**

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NEW DIRECTIONS FOR K-12 EDUCATION

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**IMPROVING TARGETING & FLEXIBILITY  
FOR TITLE I FUNDING**

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# Increasing Targeting and Flexibility in Title I ESEA to Help Disadvantaged Students

Nora Gordon

Georgetown University and NBER

# What is Title I ESEA

- \$14 billion of federal aid to school districts based on child poverty, for compensatory education

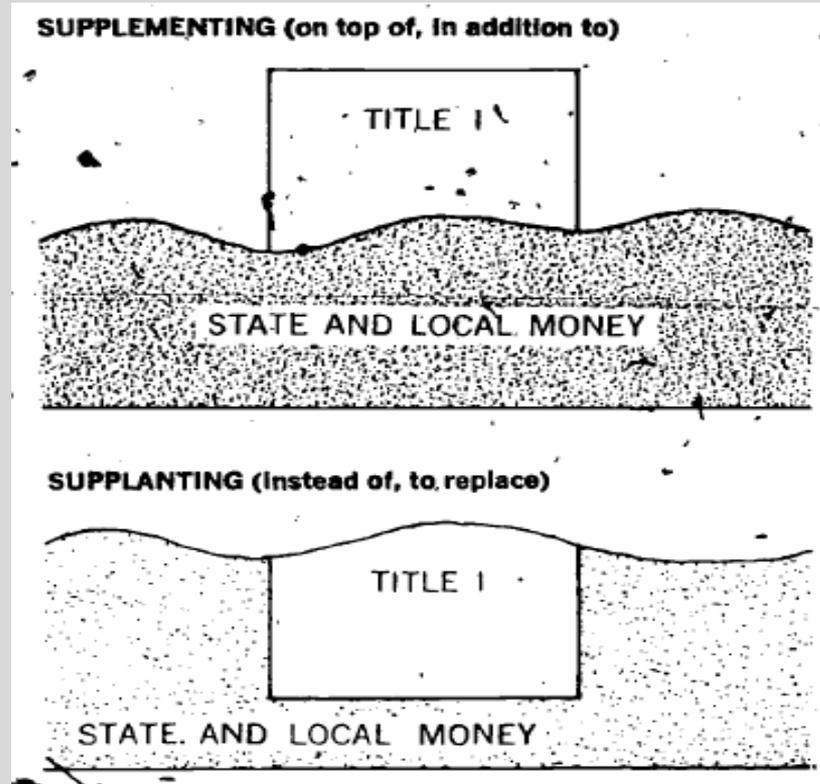
# What's the problem?

- How states and districts think they can or can't use Title I and other federal funds
- How the money is distributed

# The tension over district flexibility

- ESEA 1965: no safeguards led to misuse of funds

# Supplement not supplant



Source: "Title I ESEA: How it Works. A Guide for Parents and Parent Advisory Councils." 1978. U.S. Department of Health, Education, and Welfare.

# Supplement not supplant before and after ESSA

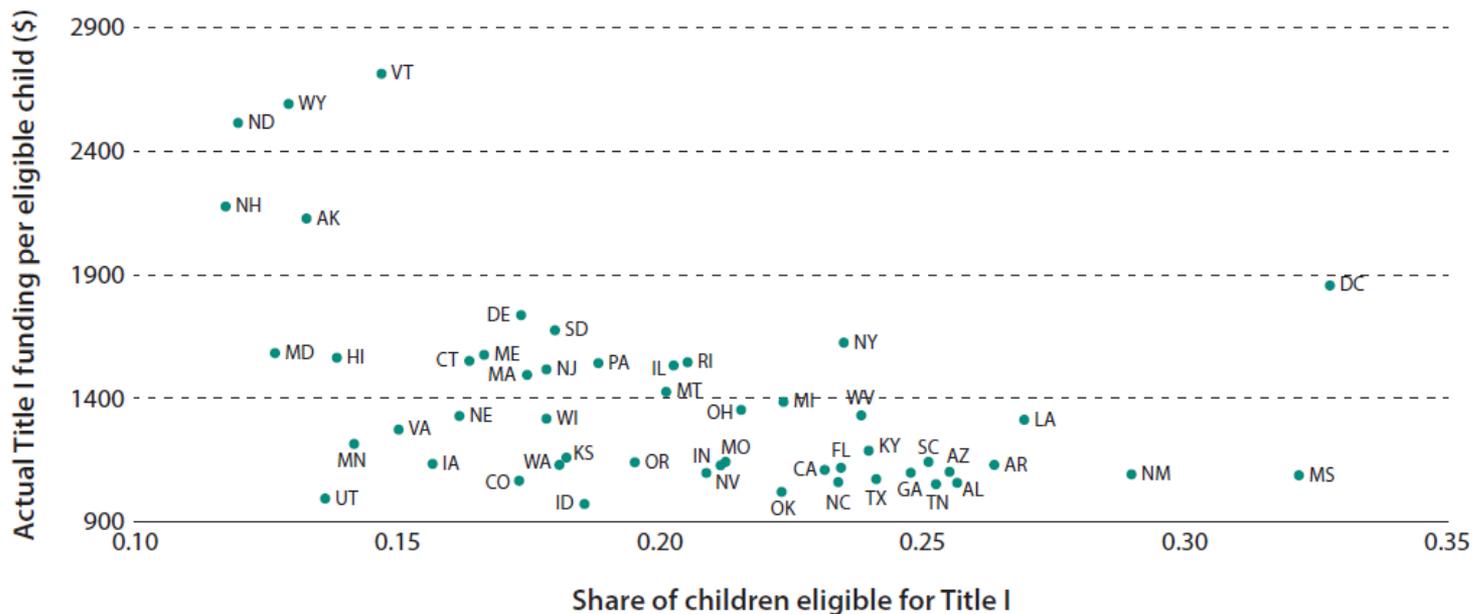
- Before: test for supplemental spending
  - Schoolwide programs could test for supplemental funds, but rarely did
  - Misunderstanding of law at SEA and LEA levels
- After: test for supplemental funds

# What to do now?

- Provide clear regulations and guidance (ED and SEAs)
- Reach beyond the Title I community
- Help SEAs and LEAs revamp policies and practices around federal grants with pilot grants for technical assistance
- Revisit single-audit quality

# How current Title I formulas distribute Title I funds per eligible, by share of students eligible

Share of Children Eligible for Title I vs. Title I Grant per Eligible Child, State Level, 2015 projected

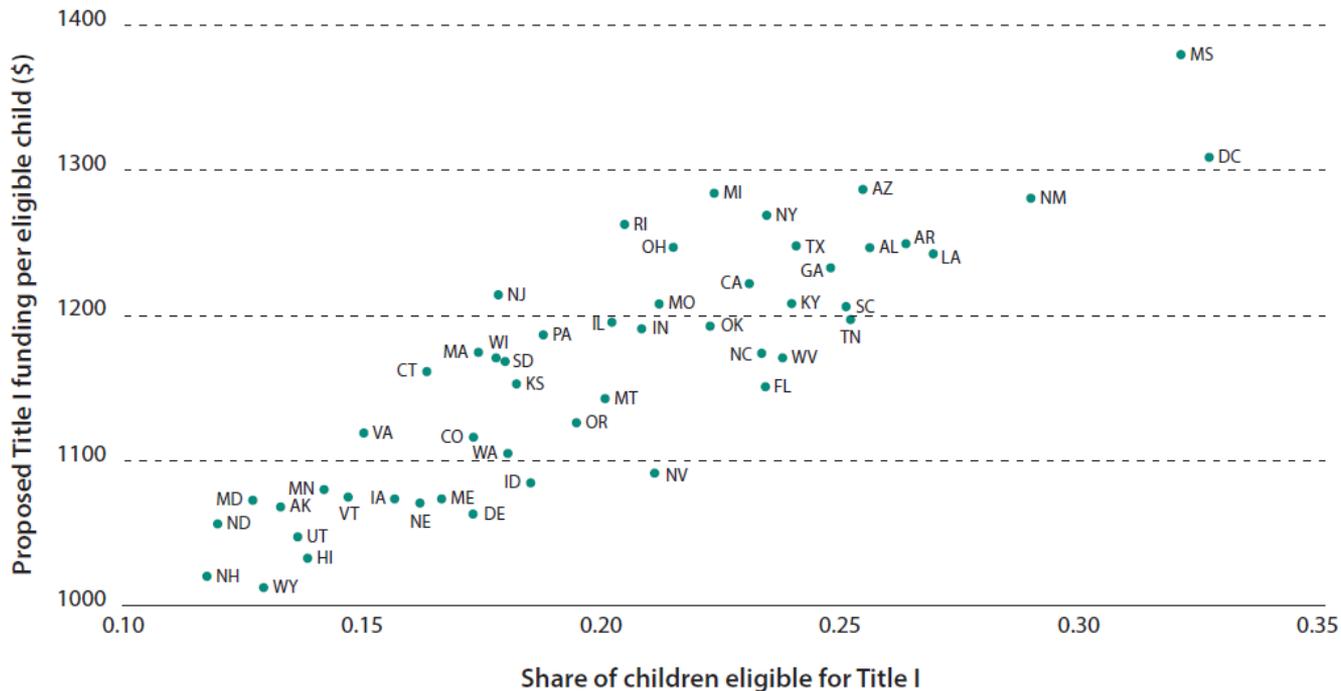


# Proposed formula changes

- Keep basic grant
- Eliminate concentration grants and EFIG
- Expand targeted grants
  - Eliminate “number weighting”
- For basic & targeted grants
  - Eliminate small state minimum
  - No longer adjust allocations based on state PPE
  - Phase out hold harmless over 4-year period
  - Keep maintenance of effort

# How proposed formulas would distribute 2015 Title I grant per eligible, by share of students eligible

## Share of Children Eligible for Title I vs. Proposed Title I Funding per Eligible Child



Source: Department of Education (2015); author's calculations.

# Surmounting political challenges

- Independent commission to recommend formula changes
- Congress votes recommendation up or down without amendment

# Why now? ESSA

- Regulation, implementation
- IES must study formulas
- Prepare for next reauthorization

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# Improving Academic Outcomes for Disadvantaged Students: Scaling Up Individualized Tutorials

Roseanna Ander

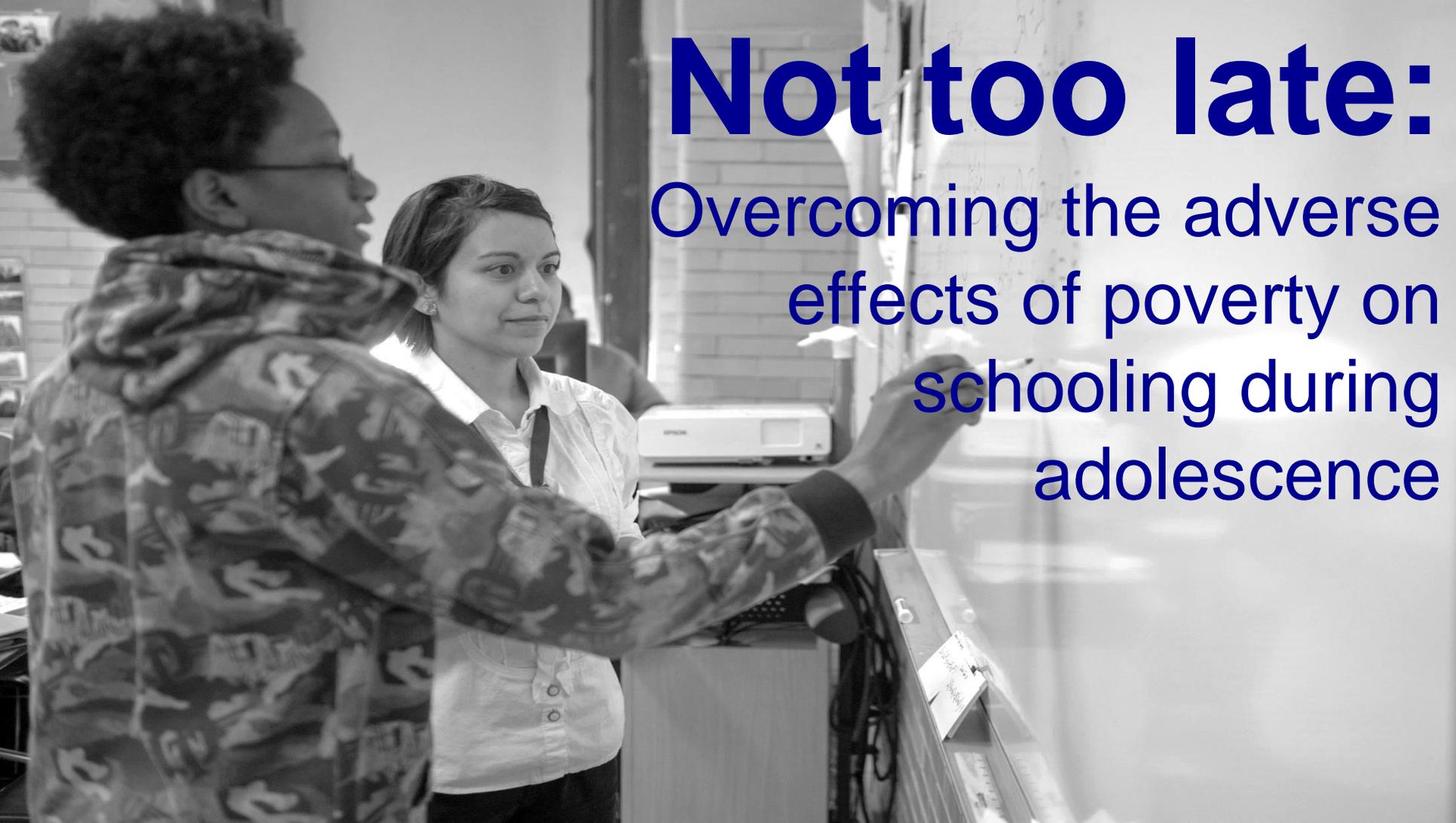
University of Chicago

Jonathan Guryan

Northwestern University

Jens Ludwig

University of Chicago



# Not too late:

Overcoming the adverse effects of poverty on schooling during adolescence

For all  $a$  and  $b$ ,

$6a^2b^3 - 3a^2b$  is equivalent to  
which of the expressions?

If  $3x - 10 = 24$ , then  $x = ?$

$$8 + 14 - 7$$

$$7 \times 4$$

$$\frac{1}{2} + \frac{3}{4}$$

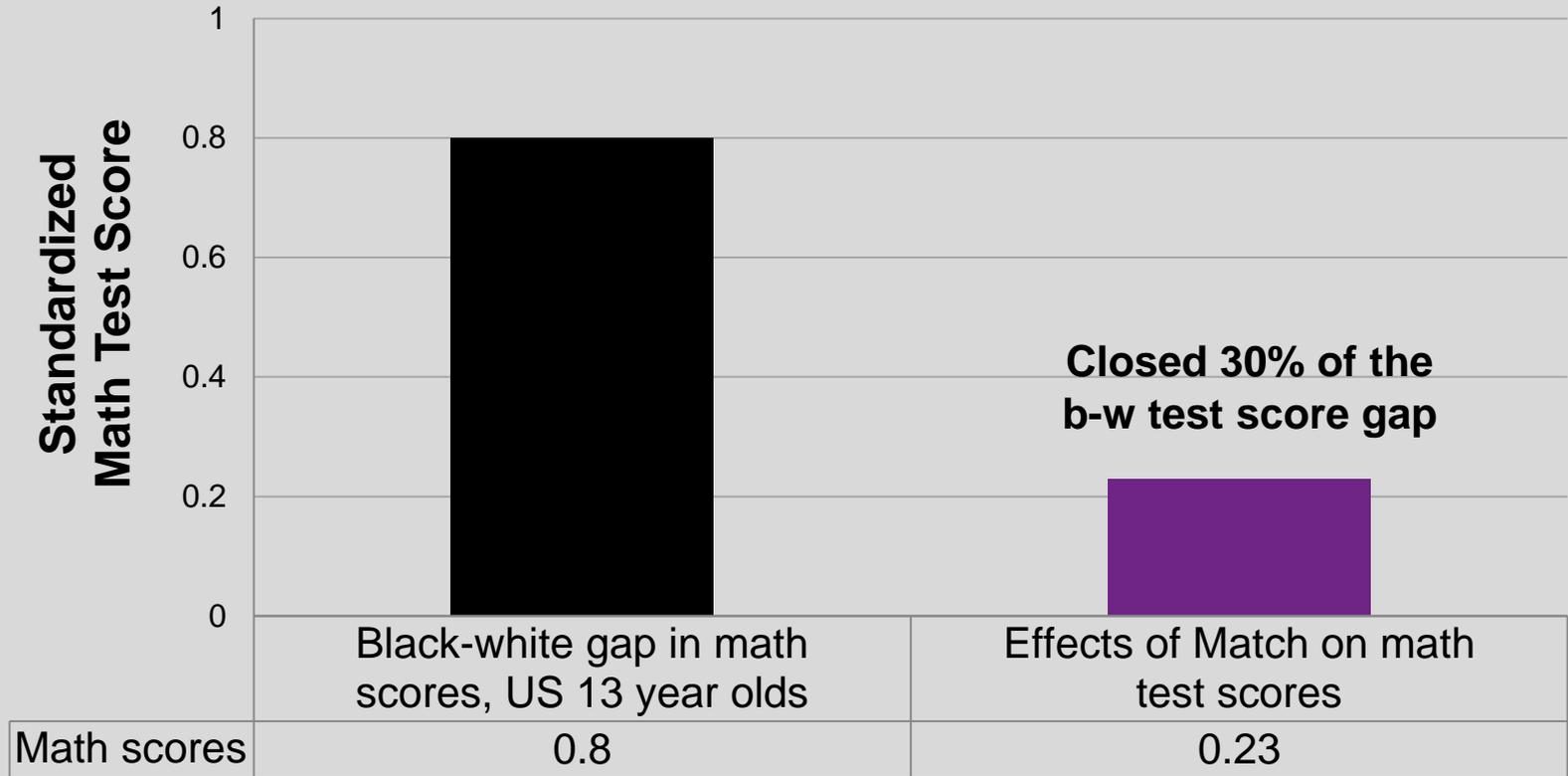
# Implication for new intervention

- If mismatch is the problem, an intervention needs to be individualized and intensive
- Goal: bring students back up to grade level so they can re-engage with regular classroom instruction

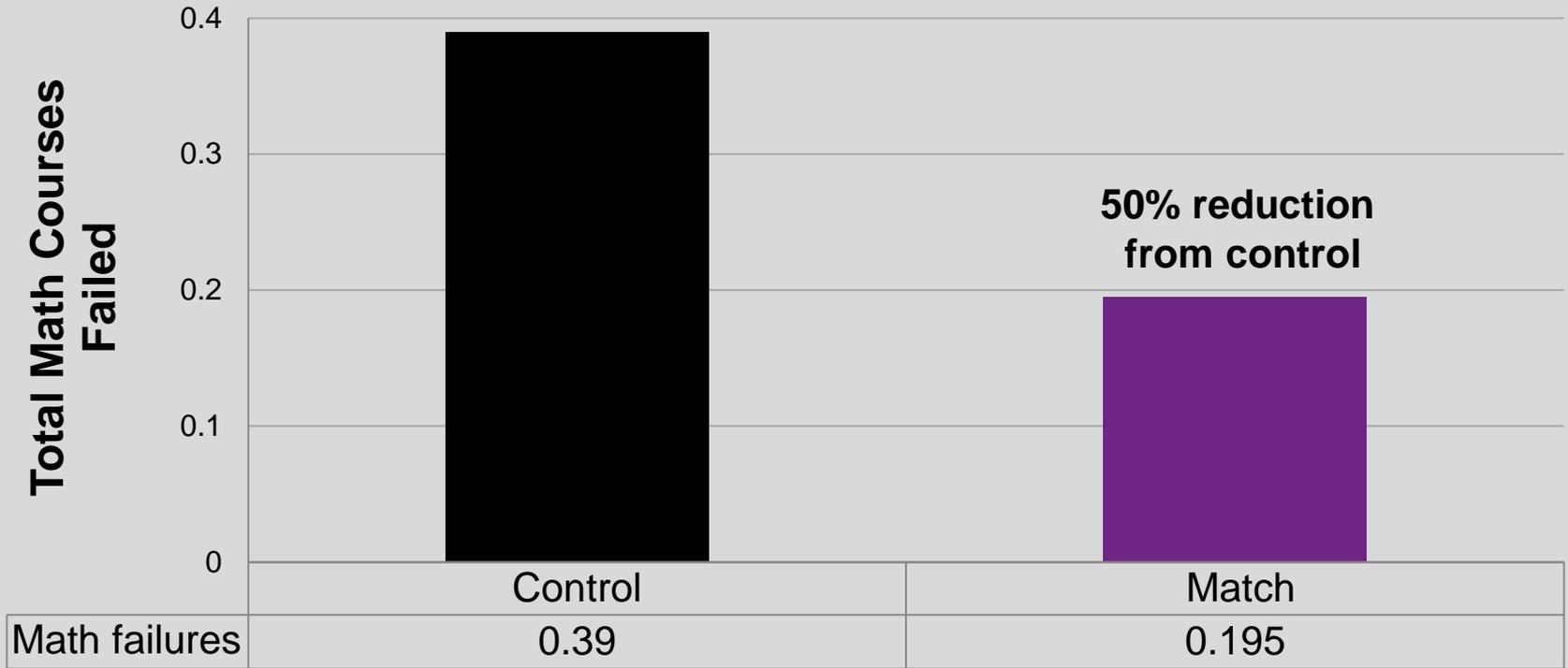
# Individualized Math Tutorials

- Designed by Match Education, now delivered by SAGA innovations
- 2 on 1
- Frequent assessment
- In school, 55 min per day, every day

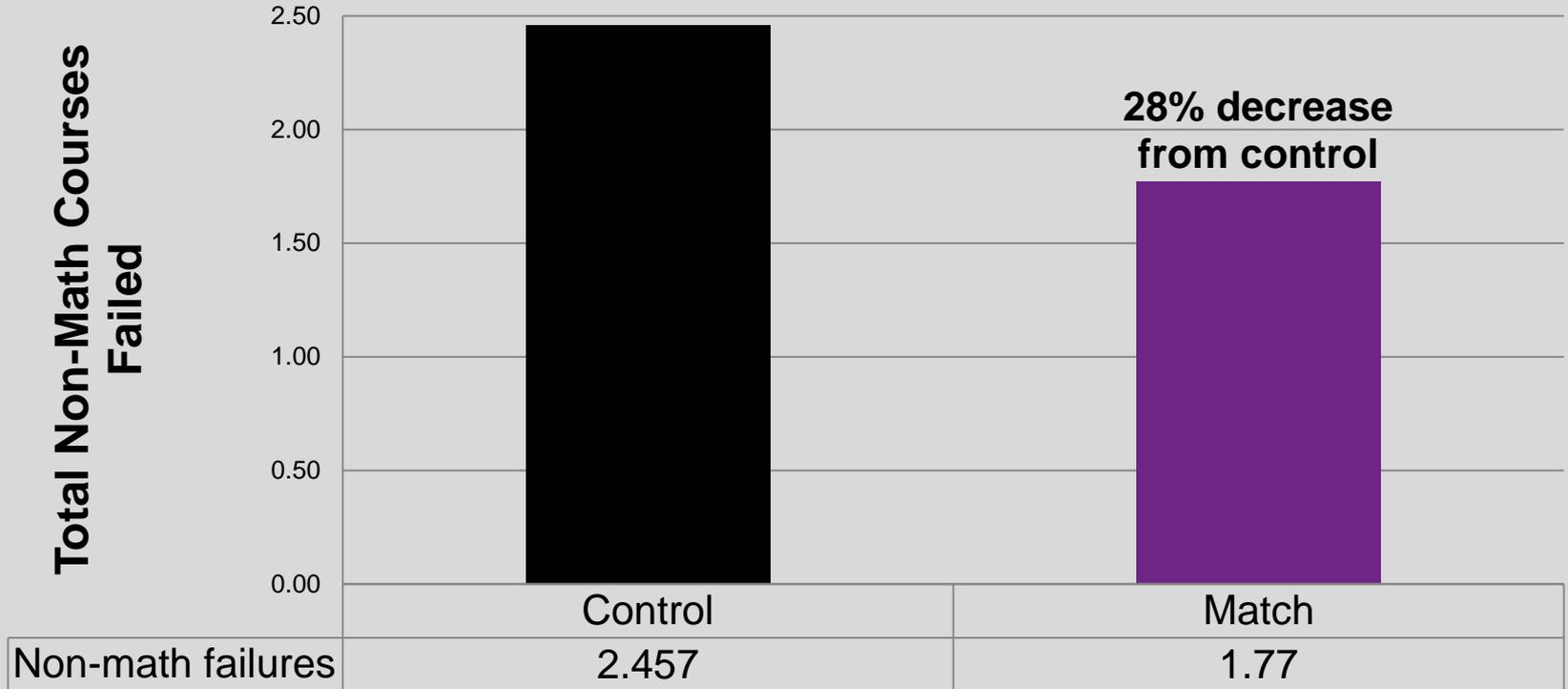
# Gain in math scores by 30% of B-W gap (equal to 1 to 2 years of extra math learning, in 1 year)



# Math Course Failures, AY 2013-14



# Non-Math Course Failures, AY 2013-14

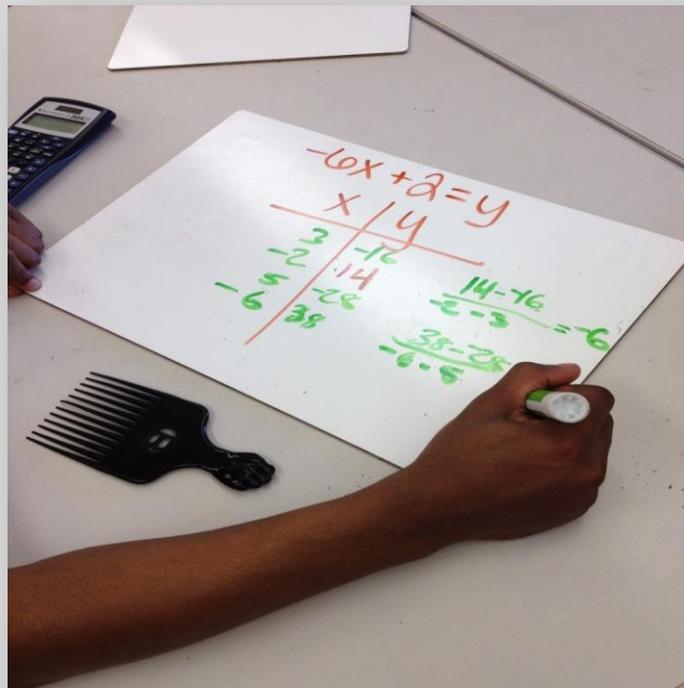


# The Proposal

- Schools receiving Title I funding
- Every 3rd – 10th grade student at least two grade levels behind in math
- Two-to-one ratio math tutorial
- In school, every day

# The Proposal

- Could be funded using Title I funds
- Goal: Get kids back to grade level
- Complementary to classroom teacher and classroom instruction



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# Learning What Works in Educational Technology with a Case Study of EDUSTAR

Aaron K. Chatterji  
Duke University

Benjamin F. Jones  
Northwestern University

My local school...and yours too.



But which digital learning activities actually work?



We have little idea, creating large barriers to unlocking the potential of educational technology.

If we do not know what really works and for whom:

- Students and teachers are being poorly served
- There is less incentive for entrepreneurs to create new products
- Ed tech is unlikely to raise outcomes significantly

But rigorous evaluation is traditionally time-consuming and expensive!

**The opportunity:**

- Create a low-cost platform for rigorous and rapid evaluation of educational technologies
- Use the evidence to put the right content in front of the right student at the right time

EDUSTAR aims to address this opportunity.

EDUSTAR is a platform for evaluating digital learning activities

The platform performs rapid, randomized-control trials (RCTs)



EDUSTAR is built on PowerMyLearning Connect, an online library of digital learning activities for K-12 students

# PowerMyLearning Connect works with 40 partner schools and has 8 million page views per month.

The screenshot shows the PowerMyLearning website interface. At the top, there is a navigation bar with the PowerMyLearning logo, links for "About Us", "What We Do", "Locations", "Get Involved", and "Donate", and buttons for "Sign Up" and "Login". Below the navigation bar, the main content area is divided into a left sidebar and a main grid of activity cards.

**Left Sidebar:**

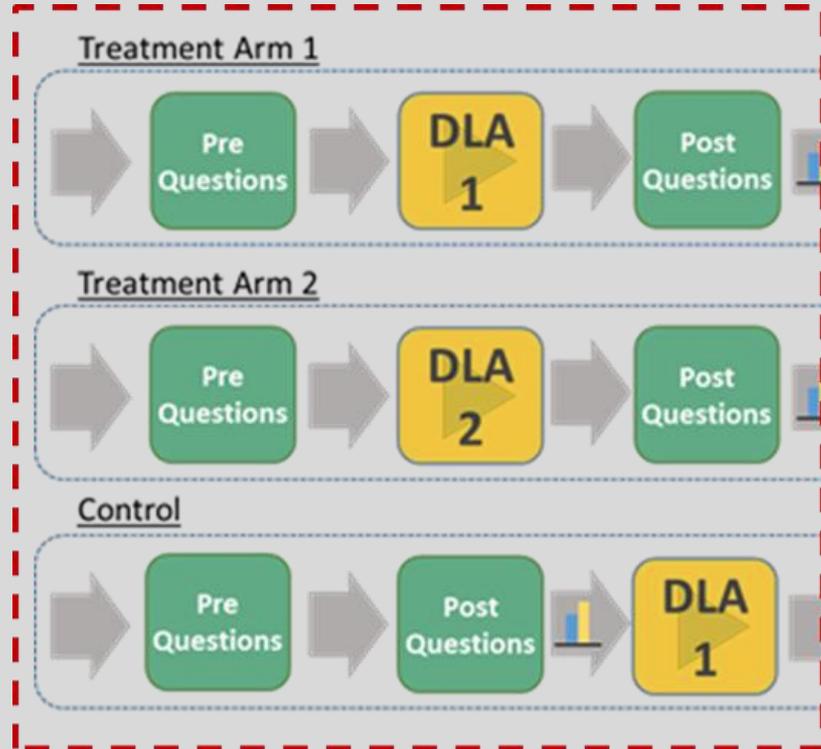
- Search:** A search bar with the placeholder "Enter Keyword(s)" and a magnifying glass icon.
- Grade(s):** A dropdown menu showing grades from K to 12.
- Subject:** A dropdown menu with "Math" selected.
- Filter:** A section with "Activity Type" and several checkboxes:
  - Practice Games & Interactives
  - Explorations
  - Creation Tools
  - Video and Tutorials
  - Exclude YouTube Content
  - iPad Compatible
  - Exclude activities that open in a new window

**Main Grid:**

The grid displays 20 activity cards, each with a title, a small image, and a "More Info" button. The cards are:

- The Challenge of the 7 Cups:** Learning Wave
- Compare Decimal Numbers:** IXL
- Perimeter, Area, and Volume Changes in Scale:** IXL
- Line Lengths:** CK-12 Foundation
- Introduction to Algebra:** MathisFun.com
- Discover Pumpkins:** Scholastic
- Transformations of Functions 2: Dilations:** The Concord Consortium
- Design a Cell Phone:** Edheads
- Whole Numbers Multiplication Blocks:** XP Math
- Practice Bar Graphs:** Oswego
- Sum Sense Multiplication:** Oswego
- Introduction to Inequalities:** MathisFun.com
- Explore the Quadratic Equation:** MathisFun.com
- Algebra Tiles: Solving Two Step Equations:** Michigan Virtual University
- Which store offers the better buy?:** LearnZillion
- Greenelle's Numbers:** Sheppard Software
- How to Use the Distributive Property:** (Image of a woman)
- Pictographs:** Favorite Hobby (Includes Fishing, Reading, Painting)
- Ducky Race:** (Image of ducks)
- Real-Life Word Problem:** (Image of a math problem)

We apply the same method that companies like Google and Amazon use every day—rapid RCTs.



# Example 1: Two activities that teach the same skill

## Skill: Dividing Fractions (Common Core Standard 6.NS.A.1)

*“Dividing Fractions”*

**How Many?**

A question like **20 divided by 5** is asking “how many 5s in 20?” (=4)  
So  **$\frac{1}{2}$  divided by  $\frac{1}{6}$**  is asking “how many  $\frac{1}{6}$ s in  $\frac{1}{2}$ ”

$\frac{1}{2} \div \frac{1}{6}$  is really asking:  
How many  $\frac{1}{6}$  in  $\frac{1}{2}$  ?

Now look at the pizzas below ... how many “1/6th slices” fit into a “1/2 slice”?

How many  in  ? **Answer: 3**

So now you can see why  $\frac{1}{2} \div \frac{1}{6} = 3$

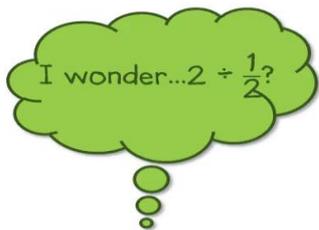
*“Basketball Dividing Fractions”*



# Example 2: Two versions of the same digital learning activity

*Baseline video*

Have you ever wondered what would happen if you divided a whole number by a fraction, instead of dividing by another whole number?



*Baseline video*

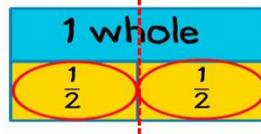
*+ section on*

*“common mistakes”*

## A Common Mistake

A common mistake is to confuse division by  $\frac{1}{2}$  with division by 2.

$$1 \div \frac{1}{2} = 2$$

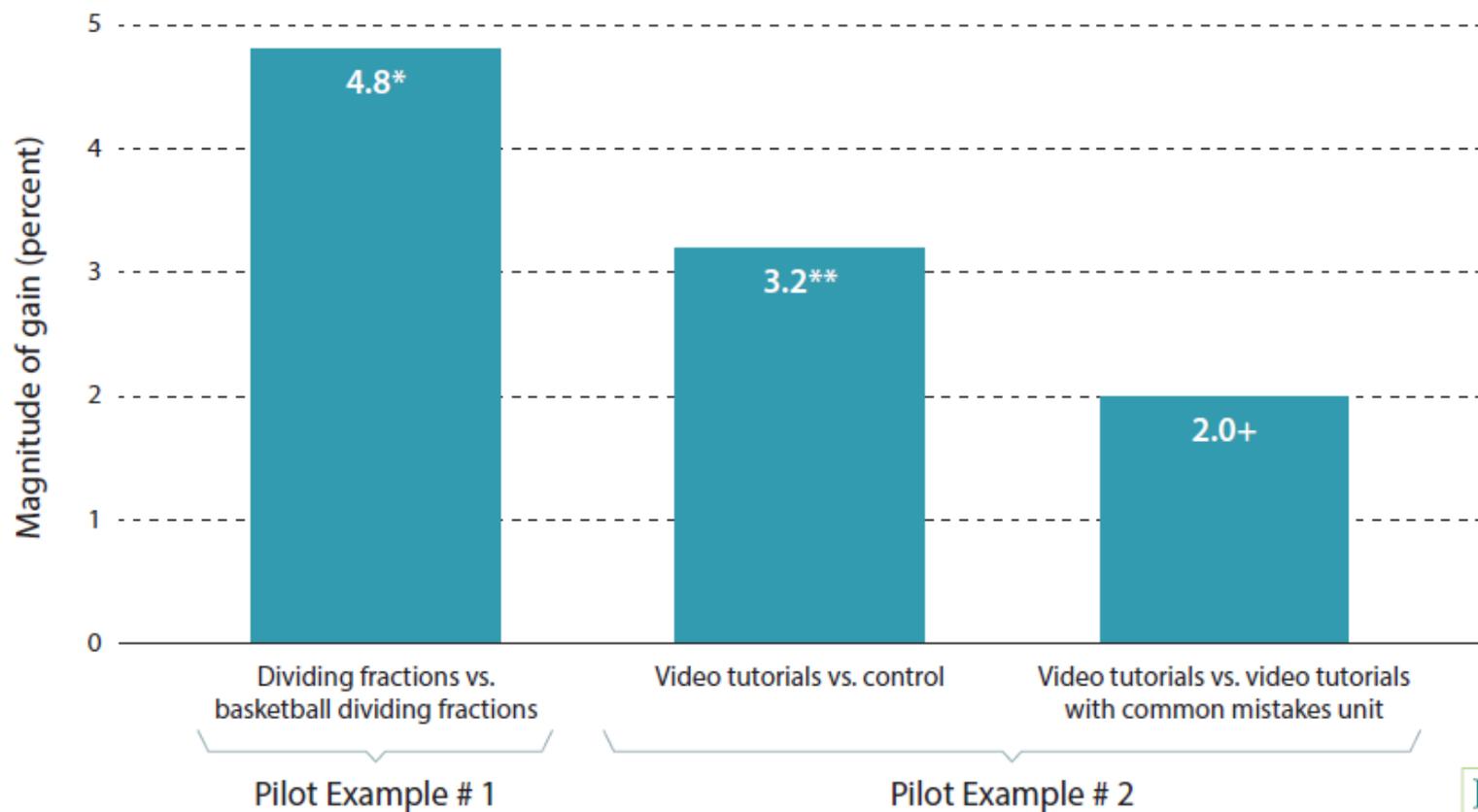


$$1 \div 2 =$$



FIGURE 1.

## EDUSTAR Results for Two Pilot Examples



# What did we learn?

Teachers in PowerMyLearning partner schools provided essential feedback

- Improved alignment of EDUSTAR goals with classroom needs

Platform can be useful to multiple groups

- Students, teachers, parents, school administrators
- Content creators
- Education researchers

Guiding Principles

- Evaluation must be rigorous, continuous, conducted by a trusted party, and preferably built on an existing large platform

# What's next?

At scale, EDUSTAR can provide systematic information about digital learning activities

Provide teachers and their students the very best educational technology available

- Target the right content to the right student at the right time
- Personalize learning for all kinds of learners
- Enhance access to high quality content for students who lack financial resources and supporting infrastructure

The smart application of educational technology is a promising opportunity to improve our K-12 education system

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