



# Harnessing Evidence


Strategies for Planning, Developing, and Strengthening Your GEAR UP Program


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## Using Zoom

The image shows a Zoom toolbar with several icons. Three icons are circled in yellow: 'Unmute' (a microphone with a red slash), 'Start Video' (a video camera with a red slash), and 'Show Captions' (a 'CC' icon). Below each circled icon is a larger, expanded version of that icon, also on a black background. The 'Unmute' expanded view shows a microphone icon with a red slash and the text 'Unmute'. The 'Start Video' expanded view shows a video camera icon with a red slash and the text 'Start Video'. The 'Show Captions' expanded view shows a 'CC' icon and the text 'Show Captions'. The Zoom toolbar also includes icons for Security, Participants, Chat, Share Screen, Record, Reactions, Whiteboards, Notes, More, and End.

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## Opener


- Please type in the chat any questions you have related to GEAR UP research and evaluation.
- You can do this now and anytime during the session.

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## Speakers



**Thomas Cech**

Senior Data Scientist,  
NCCEP

**Keren Brooks**

Director of Evaluation,  
CoBro Consulting

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## What You'll Learn Today

Planning for GEAR UP

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Leveraging What Works Clearinghouse Evidence

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Demonstrating Impact

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## Introduction

- What is your role with GEAR UP?
- Have you written a GEAR UP grant?
- Are you planning on writing a GEAR UP grant?

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# Planning for GEAR UP

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## Planning GEAR UP ~ Structure of ED RFP

- Need for the project
- Quality of the project design\*
- Adequacy of resources
- Quality of project personnel
- Quality of the project evaluation\*
- Competitive preference priorities\*

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## Project Design

- What supports will help address the needs and accomplish the goals?



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## Measurable Goals / Objectives / Outcomes



- What will you accomplish?
- How will you check your progress?
- How will you know (and show) if you achieved your goals?

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## GEAR UP Objectives Over Time

		Competition			
		2017	2018	2021	2023
<b>GPRA</b>	Pre-algebra (8 <sup>th</sup> )	✓	✓		
	Algebra 1 (9 <sup>th</sup> )	✓	✓	✓	✓
	Two years beyond Algebra 1 (12 <sup>th</sup> )	✓	✓		
	On track for graduation.	✓	✓		
	On track to apply for college - complete SAT/ACT (11 <sup>th</sup> )	✓	✓		
	Graduate from high school	✓	✓	✓	✓
	Complete FAFSA	✓	✓	✓	✓
	Enroll in college/IHE	✓	✓	✓	✓
	Place into college-level Math and English	✓	✓		
	On track to graduate college/persist to second year	✓	✓	✓	
	Student/family knowledge of PSE options, preparation, and financing	✓			
	<b>GEAR UP Program Office</b>	Average daily attendance	✓	✓	✓
	Promoted on time	✓	✓	✓	✓
	Educational aspirations/expectations	✓	✓	✓	✓

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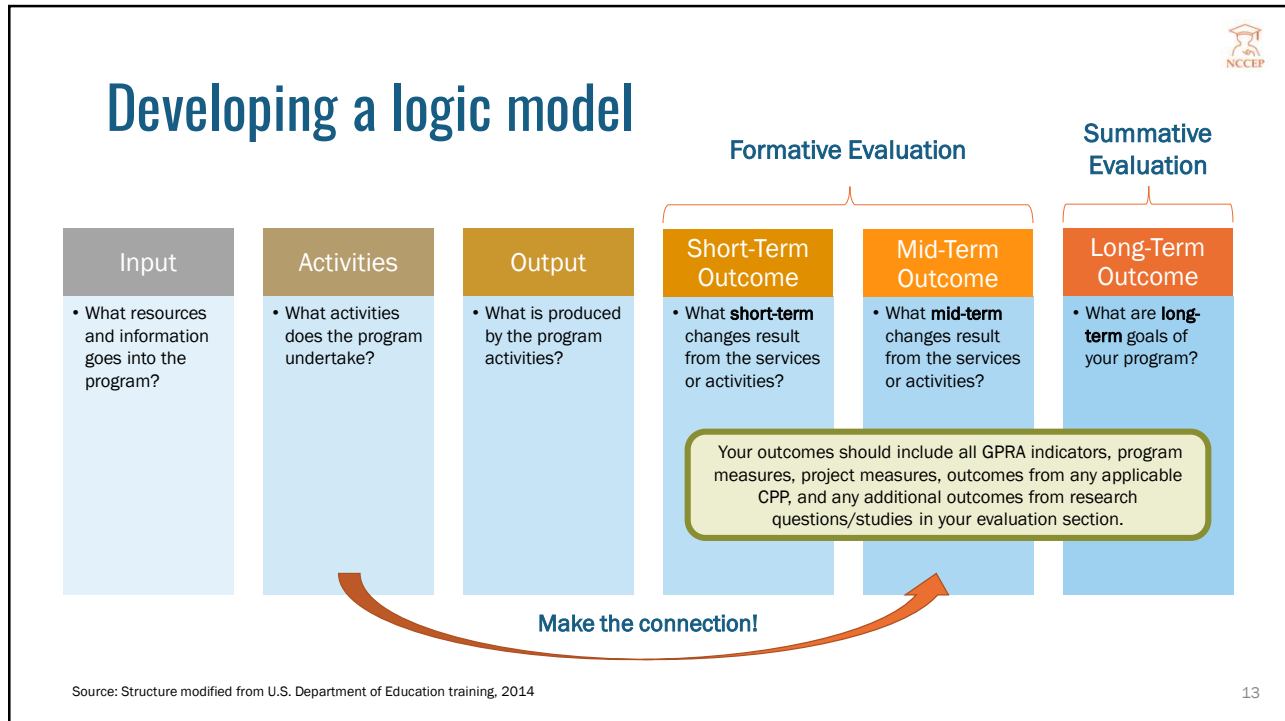
## Logic model

- Make the implicit explicit.
  - What will you do?
  - What will that help?
  - How do you know?
- “Demonstrate a rationale”



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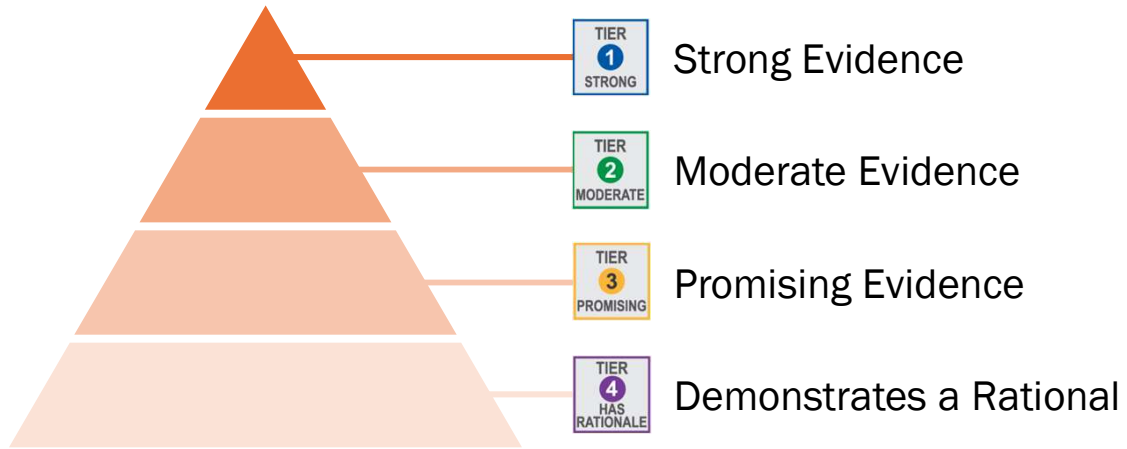
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## Leveraging What Works Clearinghouse Evidence

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# What Works Clearinghouse: Evidence Tiers



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# What Works Clearinghouse: Evidence Tiers

	Demonstrates a Rationale	Promising Evidence	Moderate Evidence	Strong Evidence
<b>Study Design</b>	A well-defined logic model	A well-implemented correlational design (accounts for selection bias).	A well-implemented quasi-experimental design	A well-implemented experimental design
<b>Positive Effects on the Outcome</b>	Additional research is planned or underway	✓	✓	✓
<b>No Overriding Negative Effects</b>		✓	✓	✓
<b>Large, Multisite Sample</b>			✓	✓
<b>Context</b>			Population <b>or</b> setting	Population <b>and</b> setting

Adapted from the IES/WWC webinar "Using WWC Resources to Identify Interventions that Meet the ESSA Tiers of Evidence". March 6, 2020.

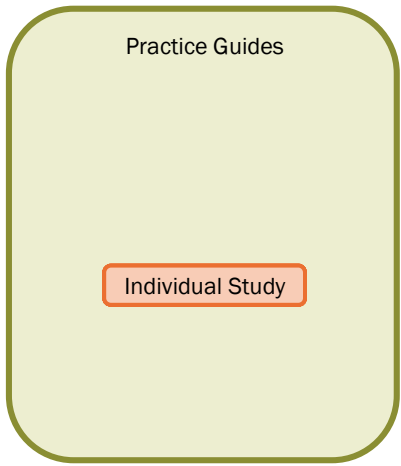
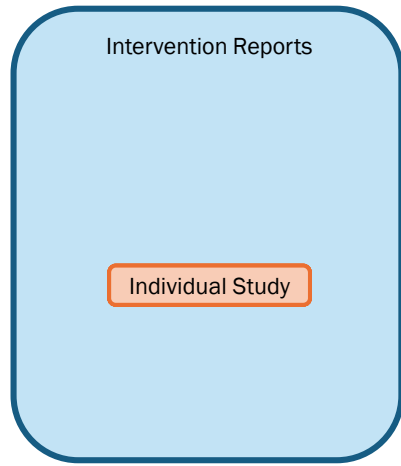
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# What Works Clearinghouse Products



# What Works Clearinghouse: Individual Studies

WWC REVIEW OF THIS STUDY Export Print

The Impacts of Three Educational Technologies on Algebraic Understanding in the Context of COVID-19 [From Here to There! vs. Business-as-usual]  
 Decker-Woodrow, Lauren E.; Mason, Craig A.; Lee, Ji-Eun; Chan, Jenny Yun-Chen; Sales, Adam; Liu, Allison; Tu, Shihfen (2023).  
 AERA Open v9 n1 p1-17. Retrieved from: <https://eric.ed.gov/?id=ED627889>

**RANDOMIZED CONTROLLED TRIAL EXAMINING 1,119 STUDENTS, GRADE 7**

Review Details Findings Sample Characteristics Study Details

Reviewed: December 2023

MEETS WWC STANDARDS WITHOUT RESERVATIONS

AT LEAST ONE STATISTICALLY SIGNIFICANT POSITIVE FINDING

**TIER 1 STRONG** AT LEAST ONE FINDING SHOWS STRONG EVIDENCE OF EFFECTIVENESS

For: Single Study Review (findings for From Here to There! (FH2T))

Using: Study Review Protocol Review Protocol 1.0  
 Review Standards 4.1

Rating: Meets WWC standards without reservations because it is a randomized controlled trial with low attrition.

This review may not reflect the full body of research evidence for this intervention.

Evidence Tier rating based solely on this study. This intervention may achieve a higher tier when combined with the full body of evidence.



# What Works Clearinghouse: Individual Studies

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The Impacts of Three Educational Technologies on Algebraic Understanding in the Context of COVID-19 [From Here to There! vs. Business-as-usual]  
 Decker-Woodrow, Lauren E.; Mason, Craig A.; Lee, Ji-Eun; Chan, Jenny Yun-Chen; Sales, Adam; Liu, Allison; Tu, Shihfen (2023). AERA Open v9 n1 p1-17. Retrieved from: <https://eric.ed.gov/?id=ED627889>

CONTROLLED TRIAL EXAMINING 1,119 STUDENTS, GRADE 7

Review Details **Findings** Sample Characteristics Study Details

Algebra outcomes—Statistically significant positive effect found for the domain

Outcome measure	Comparison	Period	Sample	Intervention mean	Comparison mean	Significant?	Improvement index	Evidence tier
Algebraic Knowledge Assessment (posttest)	From Here to There! (FH2T) vs. Active Control Problem Sets with Post-Assignment Feedback	2 Weeks	Full sample - From Here to There, 1,119 students	4.59	4.29	Yes	0.30	TIER 1 STRONG

Evidence Tier rating based solely on this study. This intervention may achieve a higher tier when combined with the full body of evidence.



# What Works Clearinghouse: Individual Studies

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RANDOMIZED CONTROLLED TRIAL EXAMINING 1,119 STUDENTS, GRADE 7

Review Details Findings **Sample Characteristics** Study Details

Characteristics of study sample as reported by study author.

**Female: 48%**  
Male: 52%

**Suburban**

**South**

**Race**

- Asian
- Black
- Native American
- Other or unknown

**Ethnicity**

- Hispanic
- Not Hispanic or Latino

**Eligible for Free and Reduced Price Lunch**

- Other or unknown



## What Works Clearinghouse: Individual Studies

WWC REVIEW OF THIS STUDY Export Print

The Impacts of Three Educational Technologies on Algebraic Understanding in the Context of COVID-19 [From Here to There! vs. Business-as-usual]

Decker-Woodrow, Lauren; Woodrow, Lauren; Lee, Ji-Eun; Chan, Jenny Yun-Chen; Sales, Adam; Liu, Allison; Tu, Shihfen (2023). AERA Open v9 n1 p1-17. Retrieved from [eric.ed.gov/?id=ED627889](https://eric.ed.gov/?id=ED627889)

RANDOMIZED CONTROLLED TRIAL EVIDENCE GRADE 7 STUDENTS, GRADE 7

Review Details Findings Sample Characteristics **Study Details**

**Setting**

This study took place in grade 7 classrooms from one large district in the southeastern United States and included 9 suburban middle schools and 34 teachers. For students in the 8 schools providing in-person instruction, the study occurred during math classrooms. For students in the one school providing virtual instruction, the study assignments were given as part of the student's home learning assignments.

**Study sample**

The researchers randomly assigned a total of 2,149 students within classrooms to the intervention group (1,430 students) or the comparison group (719 students). The analytic sample included 753 and 366 intervention and comparison students, respectively, in 143 classrooms taught by 34 grade 7 math teachers in 9 schools. The sample was made up of 48% female, 52% White, 25% Asian, 5% Black, 1% American Indian, less than 1% Pacific Islander, and 18% of students had other or unknown race. The sample included 15% Hispanic students. The sample also included 8% students with individualized education programs.

**Intervention Group**

From Here to There! (FH2T) is an educational technology game that seeks to improve student math proficiency by using embodied cognition and perceptual learning theories. Within FH2T, algebraic notations undergo a transformation into interactive elements that enforce mathematical rules through their physical movements. Students interact with and alter mathematical expressions through a range of gestures, including dragging and tapping, which

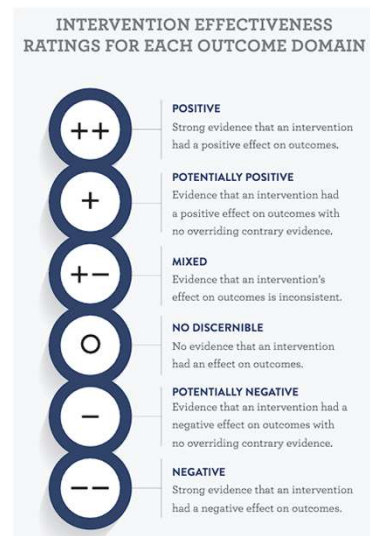
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## What Works Clearinghouse: Intervention Reports

- Synthesizes evidence for an intervention based on a systematic review
- Describes the intervention in detail, including its costs
- Show how and where the intervention was implemented
- Indicate whether the intervention was effective at improving important student outcomes



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## What Works Clearinghouse: Practice Guides

### Ratings



#### Strong Evidence

There is consistent evidence that meets WWC standards and indicates that the practices improve student outcomes for a diverse population of students.



#### Moderate Evidence

There is some evidence meeting WWC standards that the practices improve student outcomes, but there may be ambiguity about whether that improvement is the direct result of the practices or whether the findings can be replicated with a diverse population of students.



#### Minimal Evidence

Evidence may not meet standards or may exhibit inconsistencies, but the panel determined that the recommendation must be included because the intervention is based on strong theory, is new and has not yet been studied, or is difficult to study with a rigorous research design.

- Synthesize evidence to identify teaching pedagogy that may improve educational outcomes
- Combine rigorous research with knowledge of experts and practitioners
- Include specific recommendations and examples
- Expert advice on how to address roadblocks to success

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## Discussion

*If you have helped write a GEAR UP grant:*

What did you learn from the process? What surprised you?

*If you have not helped write a GEAR UP grant:*

What would you like to know from someone who has?

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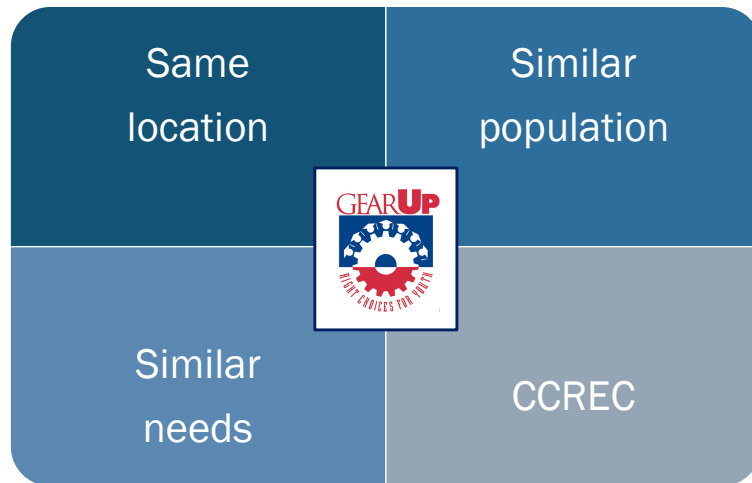
# Demonstrating Impact

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## Evaluations of GEAR UP



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## Demonstrating impact



- Baseline rates
- Comparison groups
- Within-student change
- Longitudinal trends
- External factors

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# Q & A

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## Closing

- Evidence and data are critical pieces of planning for your GEAR UP project.
- The What Works Clearinghouse has many resources that are easy to access, use, and interpret.

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## Resources

- WWC Review of Individual Studies Search
  - <https://ies.ed.gov/ncee/wwc/ReviewedStudies#/OnlyStudiesWithPositiveEffects:false%7CSetNumber:1%7CEssaRatingId:0,1,2,3>
- WWC Intervention Report and Practice Guide Search
  - <https://ies.ed.gov/ncee/wwc/Publication#/SortBy:RevisedDate,SetNumber:1>
- CCREC/GEAR UP Service Definitions
  - [https://www.edpartnerships.org/s/CCREC\\_ServiceDefinitions\\_2020\\_Final.pdf](https://www.edpartnerships.org/s/CCREC_ServiceDefinitions_2020_Final.pdf)
- CCREC Report
  - [https://www.edpartnerships.org/s/CCREC\\_10\\_Evaluation\\_Report.pdf](https://www.edpartnerships.org/s/CCREC_10_Evaluation_Report.pdf)

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## Resources

- GEAR UP Evaluations

- Sanchez, J. E., & Mutiga, A. N. (2024). Gleaning into the Aspirational-Pursuit Gap of GEAR UP Students. *Journal of College Student Retention: Research, Theory & Practice*, 0(0). <https://doi.org/10.1177/15210251231226133>
- Johnson, C. C., May, T. A., Walton, J. B., & Bolshakova, V. (2023). Supporting Urban School Students' Preparedness for Post-Secondary Study Through Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP). *Journal of Higher Education Theory & Practice*, 23(11).
- Leuwerke, W. C., Ingleby, L. D., Tillery, C. Y., Cech, T. G., & Sibaouih, C. M. (2021). Narrowing the college readiness gap: Assessing GEAR UP Iowa's intermediate impact on underserved students. *Journal of Education for Students Placed at Risk (JESPAR)*, 26(4), 352-370.
- Mitchall, A. M., & Jaeger, A. J. (2018). Parental influences on low-income, first-generation students' motivation on the path to college. *The Journal of Higher Education*, 89(4), 582-609.
- Knaggs, C. M., Sondergeld, T. A., & Schardt, B. (2015). Overcoming barriers to college enrollment, persistence, and perceptions for urban high school students in a college preparatory program. *Journal of Mixed Methods Research*, 9(1), 7-30.

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## Thank You!



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