Selecting Evidence-Based School Interventions

Rigor, Relevance, and Reward

MISSISSIPPI DEPARTMENT OF EDUCATION
Ensuring a bright future for every child

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Introductions
And Overview

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Kahoot

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- Enter the survey PIN when prompted

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Meeting Norms

- Agenda
- Cellphones/Laptops
- Bathrooms
- Breaks
- Questions

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Framing the Day and Goals of Workshop

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Mississippi Department of Education

VISION

To create a world-class educational system that gives students the knowledge and skills to be successful in college and the workforce, and to flourish as parents and citizens

MISSION

To provide leadership through the development of policy and accountability systems so that all students are prepared to compete in the global community

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State Board of Education Goals FIVE-YEAR STRATEGIC PLAN FOR 2016-2020

1. All Students Proficient and Showing Growth in All Assessed Areas
2. Every Student Graduates from High School and is Ready for College and Career
3. Every Child Has Access to a High-Quality Early Childhood Program
4. Every School Has Effective Teachers and Leaders
5. Every Community Effectively Uses a World-Class Data System to Improve Student Outcomes
6. Every School and District is Rated "C" or Higher

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By lunch, you will be able to…

- Define evidence-based interventions
- Identify the four tiers of evidence as defined by ESSA and explain the differences between them
- Use the Rigor, Relevance, Reward framework to consider good-fit interventions for your school/district

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Framing Discussion

- First, decide who will speak for your group when we debrief in about 10 minutes.
- When looking for evidence-based interventions (includes strategies, resources, purchased resources, consultants, etc.), how do you ensure that you stay focused on finding the BEST strategies/resources for your students, and not simply on compliance?
- What is your process for finding the best interventions? How involved are you? Who are the key people that should be involved?
- When dealing with vendors or consulting companies, what questions are you asking? How do you vet their claims?

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ESSA Cycle for

Continuous Improvement

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Steps to Promote Continuous Improvement

Image source: U.S. Department of Education

Adapted from https://www2.ed.gov/

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What segment of the ESSA cycle do you feel MOST confident about?

Identifying Local Needs

Selecting Relevant, Evidence-Based Interventions

Planning for Implementation

Implementing

Examining and Reflecting

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What segment of the ESSA cycle do you feel LEAST confident about?

- Identifying Local Needs
- Selecting Relevant, Evidence-Based Interventions
- Planning for Implementation
- Implementing
- Examining and Reflecting

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Steps to Promote Continuous Improvement

Image source: U.S. Department of Education

Adapted from https://www2.ed.gov/

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ESSA Cycle for

Continuous Improvement

Step 1: Identifying Local Needs

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Identifying Local Needs

- ESSA requires that a needs assessment be conducted to determine issues that should be addressed at schools in need of targeted and comprehensive support.
- Interventions that are selected should be those that address the issues identified in the needs assessment, have the highest evidence-level possible, and be those that the school has the feasibility to implement and sustain.
- SIG plan, 1003A, Title I Consolidated and Schoolwide Plans

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Identifying Local Needs

Stakeholders	Title IA (Statute: §1112(b)(1)(K), §1112(b)(7)(A))	Title IIA (Statute: §2102(b)(2)(A) and §2103(b)(3)(A))	Title IIIA (Statute: §3116(b)(1)(A))	Title IVA (Statute: §4108(2)(C-J))
Teachers	x	x	x	x
Principals	x	x	x	x
Other school leaders	x	x	x	x
Parents/family members	x	x	x	x
Paraprofessionals	x	x	n/a	n/a
Specialized instructional support personnel	x	x	n/a	x
Administrators	x	n/a	x	n/a
Other Appropriate School Personnel	x	x	n/a	n/a
Nonpublic Schools	x	x	x	x
Community Partners/Community-Based Organizations/Community Members	x	x	x	x
Researchers	n/a	n/a	x	n/a
Early childhood education programs (where applicable)	x	n/a	n/a	n/a
Institutions of higher education (where applicable)	x	n/a	x	n/a
Employers (where applicable)	x	n/a	n/a	n/a
Local government representatives (which may include a local law enforcement agency, local juvenile court, local child welfare agency, or local public housing agency)	n/a	n/a	n/a	x
Indian tribes or tribal organizations (where applicable)	n/a	n/a	n/a	x
Other stakeholders/other organizations with relevant experience	n/a	x	x	n/a
Public or private entities	n/a	n/a	x	n/a

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Stakeholder Groups

Students and Youth

- Alumni associations
- Student mentors
- Juvenile justice programs, youth court
- Youth-led initiatives or organizations
- Youth groups or leadership programs, including faith-based youth groups (e.g., Boys and Girls Clubs)
- Student subgroups and students with specific needs and assets (English learners, students with an IEP)

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Stakeholder Groups

Parent, Family, and Community Members

- Family and community organizers and advocacy groups
- Business owners, esp. that employ youth
- Faith-based organizations
- Parents, guardians, and families, including those of students with disabilities, English learners, and other underrepresented students
- Families and advocates for students in the foster system or youth experiencing homelessness

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Steps to Promote Continuous Improvement

Image source: U.S. Department of Education

Adapted from https://www2.ed.gov/

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ESSA Cycle for

Continuous Improvement

Step 2: Selecting Relevant, Evidence-Based Interventions

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"Evidence Based"

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At Your Table (5 minutes)

- What's "Evidence-Based"?
- Is that different from "Research Based?" (NCLB)
- What do you look for when you're trying to decide whether an intervention is "evidence-based?"
- From what you know about the "evidence-based" requirements under ESSA, will you have to change the way you select interventions going forward?

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Every Student Succeeds Act (ESSA) Overview

- The Elementary and Secondary Education Act (1965) was designed to increase the role of research in educational decisions
- No Child Left Behind (NCLB) "scientifically based research"….often called "research-based" or "data driven"
- Every Student Succeeds Act (ESSA) "evidence-based interventions"

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What are Evidence-Based Interventions?

Research-Based: "Any program [or strategy or practice] can find *some* research that supports the principles it incorporates" (Slavin, 2007), but usually has **no proof** that the program will be effective.

Evidence-based interventions are programs, strategies, or practices that have been shown to be effective in leading to a particular outcome. **There is definitive evidence to show they produce results when implemented correctly.** --adapted from CA Department of Education (2017)

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Research-Based versus Evidence-Based

Research-Based	Evidence-Based
• Descriptive	• Experimental (group comparisons)
• Intervention based on "existing research"	• Intervention has been tested directly
• May not have been tested at all	• Pre/Post Designs
• "Hope" or "Think"	• "Expect"

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ESSA Requirements

Programs in Titles I, II, III, and IV to include "evidence-based interventions"

Some programs recommend "evidence-based," but most (Title I, section 1003A, school improvement funds) require "evidence based"

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Is this intervention evidence-based?

Demonstrates a statistically significant effect on improving relevant outcomes according to one of the following….

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Is this intervention evidence-based?

strong evidence *based on at least one well-designed and well-implemented* ***experimental*** *study*

OR

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Is this intervention evidence-based?

moderate evidence *from at least one well-designed and well-implemented* ***quasi-experimental*** *study*

OR

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Is this intervention evidence-based?

promising evidence *from at least one well-designed and well-implemented* ***correlational study with statistical controls for selection bias***

OR

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Is this intervention evidence-based?

- Demonstrates a **rationale** based on high-quality research findings **AND**
- Includes a rigorous **evaluation designed to produce strong, moderate or promising evidence** of the effects of the activity, strategy, or intervention

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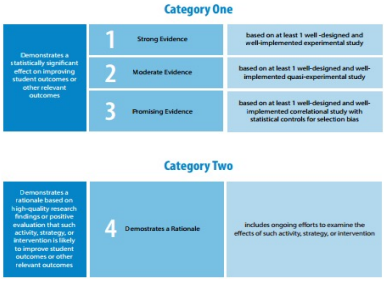
ESSA Levels of Evidence



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"Demonstrates A Rationale"

- "Research-based?"
- "Linking studies"
- No direct studies yet, BUT
- Well-defined logic model, informed by literature review, WHICH
- Strongly suggests how the intervention is likely to improve student outcomes.

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"Demonstrates A Rationale"

- **Title I, Part A Reservation funds can be used, but not the 7% for school improvement**
- There must be a plan to study the effects that will happen AS PART OF THE INTERVENTION

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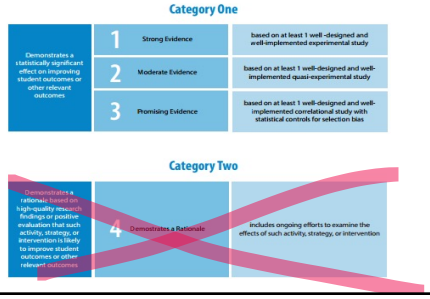
ESSA Levels of Evidence



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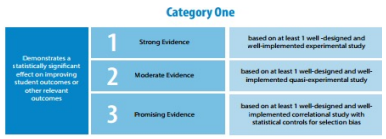
ESSA Levels of Evidence



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Questions?

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Research Terminology 101

Let's Review

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Quantitative vs Qualitative Research

Quantitative	Qualitative
Uses numerical data/statistical analysis to describe the effects of an intervention on a group	Not numeric
Pre/post scores, survey data, attendance data, teacher turnover rates	Focus groups, interviews, observations
Seeks to explain and predict	Seeks to explore or describe
Relies on representative samples, especially randomly chosen	Usually very small sample size, often not randomly chosen
Meets ESSA "evidence based" standard	Does not meet ESSA "evidence based" standard.

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Basic Research Terminology

- **Control group:** basically, this group does not get the intervention, but carries on "business as usual"
- **Treatment or Experimental group:** this is group that gets the intervention
- **Causal:** the treatment CAUSED students to improve (on whatever your desired outcome is)
- **Correlational:** THERE WAS A RELATIONSHIP BETWEEN the treatment and the student outcomes, but we can't be SURE that the treatment caused it

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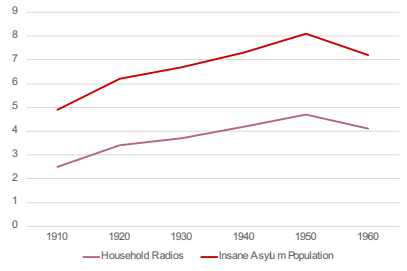
Correlation is Not Causation



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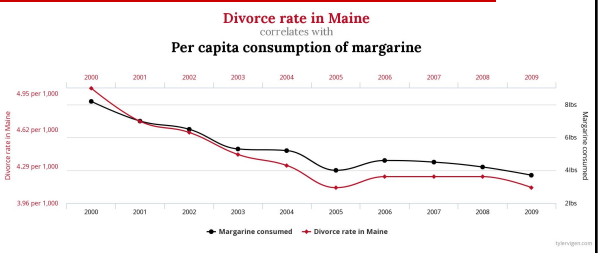
Correlation is Not Causation



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MORE Basic Research Terminology

- **Statistical significance:** did the intervention seem to affect the treatment group in some way?
- $p < .05$
- No indication of how much it helped, or the direction of effect. Means the treatment did something—these results weren't accidental.
- Results can be statistically significant but not really that important in a practical sense.

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MORE Basic Research Terminology

- **Effect size:** how much did this intervention actually AFFECT the outcome?
- Can be small (low payoff) or huge. Can be negative—a large negative effect means students got way WORSE!
- If a study does not report effect size, proceed with caution!

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Common Measures of Effect Size

Cohen's *d*	Eta squared (η^2)
.2 to .4 SMALL effect	.01 to .05. SMALL effect
.5 to .7 MEDIUM effect	.06 to .13. MEDIUM effect
.8 and ⇧ LARGE effect	.14 and ⇧ LARGE effect

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Questions?

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Quiz

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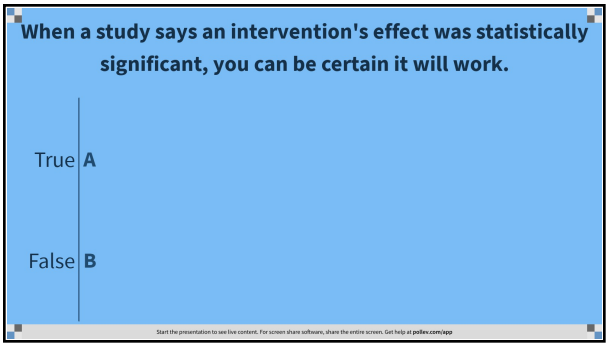
When a study says an intervention's effect was statistically significant, you can be certain it will work.
True A
False B
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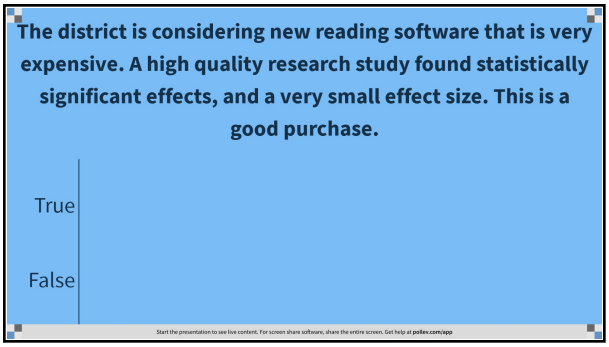
The district is considering new reading software that is very expensive. A high quality research study found statistically significant effects, and a very small effect size. This is a good purchase.
True
False
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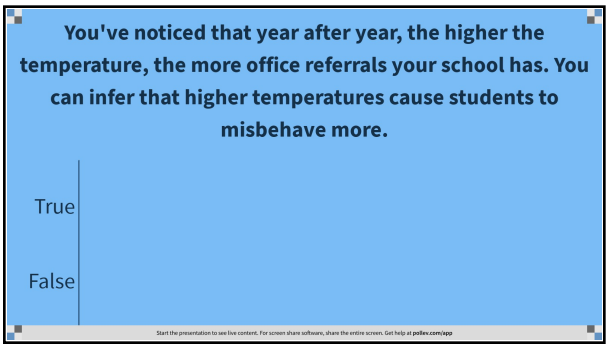
You've noticed that year after year, the higher the temperature, the more office referrals your school has. You can infer that higher temperatures cause students to misbehave more.
True
False
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You've found a really good study about teacher coaching. In this research article, the researcher observed two literacy coaches once per month and interviewed them about what was working and what wasn't. This study can be used to meet ESSA requirements.

True

False

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A vendor tells you that research on their curriculum yielded statistically significant results with a large effect size, and that it meets the criteria for "evidence-based" under ESSA. Based on that testimony, you can feel good about purchasing.

True

False

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Questions?

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Reading and Interpreting Research Studies

What should you look for?

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PRETEST: What's the difference between STRONG evidence, MODERATE evidence, and PROMISING evidence according to ESSA?

- Interventions with STRONG evidence definitely work, MODERATE evidence means they probably work, and PROMISING evidence means they work to some degree.
- These words tell you nothing about whether or not interventions work. They only tell you about the quality of the research that's been done to investigate them.
- Neither of these is correct.

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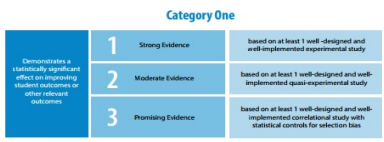
ESSA Levels of Evidence



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	Strong Evidence	Moderate Evidence	Promising Evidence
Research Design	Experimental (highest standard)	Quasi-Experimental (often more practical esp in education)	Correlational (usually easiest)
Demonstrated Effects	• control and experimental groups • **random assignment**	• control group and experimental groups • **NOT randomly assigned**	• still poorly defined under ESSA • but looks for relationships between events or groups
"This intervention…."	This intervention CAUSED (scores to go up, office referrals to decrease, etc.).	This intervention CAUSED (scores to go up, office referrals to decrease, etc.).	This intervention WAS RELATED TO (a rise in scores, a decrease in referrals, etc.).

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Strong Evidence

- **Experimental design: Experimental group and a control group**
- Participants (students, teachers, classrooms) are **randomly assigned** to a group—*every participant has an equal chance of being in the control of experimental group*
- Causal
- Statistically significant, positive effect
- Large sample (rule of thumb: 350+), multi-site sample
- **Sample overlaps with the population AND setting you're serving**

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Strong Evidence--Experimental

Researchers found 4 elementary schools in NY that agreed to participate in the study. **All 2,102 first grade students were pre-tested using DIBELS** during the first three weeks of school.

Researchers created **matched pairs** based on DIBELS results and demographic characteristics (i.e., gender, ethnicity, ELL status, special education status, and free/reduced lunch status).

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Strong Evidence--Experimental

- One student in each matched pair was **randomly selected** to be in the treatment group (N = 1,051), and one in the control group (N = 1,051), .
- Treatment group students were placed in LLI groups by teachers. Control group students did not receive LLI.
- Neither treatment nor control students received any additional pull-out literacy interventions during the study period.
- Post test: DIBELS scores

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Strong Evidence--Experimental

Discuss at your table:

1. **Did every child have an equal chance at being either in the experimental group or the control group?**
2. **Does it matter that schools volunteered for the study?**
3. **Pairs were matched using pretest scores, gender, ethnicity, ELL status, special education status, and free/reduced lunch status. What else might have mattered?**

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	Strong Evidence	Moderate Evidence	Promising Evidence
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Moderate Evidence

- **Quasi-experimental design: Experimental group and a control group**
- Participants **NOT randomly assigned** to a group—*an unequal chance of being either an experimental or control subject*
- Causal
- Statistically significant, positive effect
- Large sample (rule of thumb: 350+), multi-site sample
- **Sample overlaps with the population AND setting you're serving**

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Moderate Evidence—Quasi Experimental

Schools in MA that were already implementing SFA were **recruited to participate** in the study, which began at the start of the 2008–09 school year. Once 20 SFA® schools were recruited, recruitment began for **comparison schools with similar demographic and achievement characteristics; matching criteria included school-level achievement, percentage of students eligible for free school meals, and the percentage of ESL students.**

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Moderate Evidence—Quasi Experimental

Intervention Group

- Students in the intervention group (N=492) received reading instruction through SFA®.

Comparison Group

- Students in the comparison group (N= 1043) continued using their regular, previously planned curricula (i.e., Letters and Sounds; Jolly Phonics; Read, Write Inc.).

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Moderate Evidence—Quasi Experimental

Discuss at your table:

1. **Does it matter that groups were not randomly assigned?**
2. **Does it matter that schools who volunteered were already using SFA?**
3. **Groups were matched using school-level achievement data, percent of students eligible for F/R lunch, and percentage of ESL students. What else might have mattered?**

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	Strong Evidence	Moderate Evidence	Promising Evidence
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Promising Evidence

- **Correlational study OR experimental design with small sample**
- Still poorly defined in ESSA
- **Statistical controls for selection bias: "covariates" or "controlled for"**
- NOT causal—looks for "relationships between" (correlation)
- Not countered by other high-quality studies
- **Sample overlaps with the population AND setting you're serving**

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Promising Evidence—Correlational

A first-grade teacher **volunteered to test** the Read Naturally program with her students for 3 weeks. **Her 12 students** were tested to get STAR, Comprehension Reading Test (CRT), and Oral Reading Fluency (ORF) test scores. **Researchers then found 12 more first-graders** in the same school with **closely matching test scores** to use as a control group.

The experimental group used Read Naturally SE for 45 minutes a day, 4 days a week. The control group continued business as usual. After **three weeks** in their respective reading programs, the students were then re-tested using the same tests.

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Promising Evidence—Correlational

Discuss at your table:

1. **Can you draw a good conclusion based on this size sample? What about the duration of the treatment?**
2. **Groups were matched using reading test scores. What else might have mattered?**
3. **What would this study need to change to be considered "Strong" evidence?**

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Practice and Review

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Evidence Level Review HANDOUT

1. Researchers wanted to test whether there was a relationship between instructional coaching and office referrals. They looked at a school in the district that had implemented a coaching model the year before, and counted the number of office referrals per year for the three years before the coaching started, then the year with coaching.

The researchers found that office referrals went down after the school began using instructional coaches.

This is an example of….

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Evidence Level Review

2. Researchers wondered whether flashcards help students in a math tutoring program learn multiplication facts better. They asked for teacher volunteers, and gave students in those classes a multiplication pretest.

Half the volunteer teachers were trained and began flashcard games with their students, while the others continued with standard worksheet practice.
The researchers found that students in the flashcard condition didn't learn multiplication facts better than those in the no flashcard condition.
This is an example of….

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Evidence Level Review

3. Researchers randomly selected half the reading teachers in a district to implement a computer-based literacy program, while the other half continued to use the district textbook package. At the end of the year, they found that students in the textbook classrooms scored significantly higher on achievement tests than those who used the computer-based program.

This is an example of….

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PRETEST: What's the difference between STRONG evidence, MODERATE evidence, and PROMISING evidence according to ESSA?

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These words tell you nothing about whether or not interventions work. They only tell you about the quality of the research that's been done to investigate them.

Neither of these is correct.

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Strong Evidence—But…..

- Strong, Moderate, Promising Evidence apply to **research rigor ONLY**
- **Statistically significant** simply means the results were not due to chance
- Ready, Set, Leap! has **Promising Evidence** that it did not work
- In a study using **random assignment** of PreK students in NJ, the authors found **statistically significant negative effects**

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Strong Evidence—But…..

- Don't use Promising or Moderate or Strong Evidence as a shortcut
- *Don't use statistical significance as a shortcut*
- Read the study or a review of it, and consider the **rigor of the research and its findings**
- **What else should you consider?**

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Questions?

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Tech Break

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Steps to Promote Continuous Improvement

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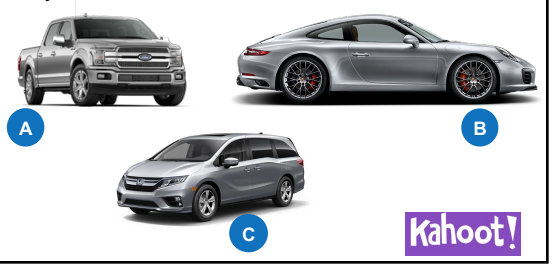
All of these have strong evidence. Which car should you buy?



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Rigor, Relevance, & Return

A Framework for Choosing Evidence-Based Interventions

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Rigor, Relevance, Reward Framework

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Intervention Rating Worksheet

- Useful for teams researching interventions
- Compares research studies directly
- Notes for research rigor, relevance to population, and return on investment of funding and capacity (e.g., staffing, training, stakeholder effort)
- Space for overall recommendation and comments
- Part of a larger Intervention Rating TOOLKIT, we'll use this afternoon

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Intervention Rating Worksheet

		Intervention 1	Intervention 2	Intervention 3
	Name of Intervention:			
a	RIGOR: (Circle one) How good is the research?	Strong Moderate Promising	Strong Moderate Promising	Strong Moderate Promising
b	RELEVANCE: (Circle one) How close to your population?	Very Similar Somewhat Not Similar	Very Similar Somewhat Not Similar	Very Similar Somewhat Not Similar
c	RETURN: (Circle one) What's the effect size?	Large Medium Small/None	Large Medium Small/None	Large Medium Small/None
d	Estimated cost/yr Consider both starting costs and ongoing			
e	Recommended For Further Consideration? (Circle one)	Highly Recommended Somewhat Recommended Not Recommended	Highly Recommended Somewhat Recommended Not Recommended	Highly Recommended Somewhat Recommended Not Recommended

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Study Example -- Strong Evidence

Kim, J.S., Samson J.F., Fitzgerald, R., & Hartry A. (2009)

A randomized experiment of a mixed-methods literacy intervention for struggling readers in grades 4–6: effects on word reading efficiency, reading comprehension and vocabulary, and oral reading fluency (Read 180)

Kahoot!

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Study Example -- Strong Evidence

The purpose of this study was (1) to examine the **causal effects** of READ 180 and (2) to examine whether print exposure among **children in the experimental condition** explained variance in **posttest reading scores**.

A total of 594 children in Grades 4–6 were **randomly assigned** to READ 180 or a district after-school program. Both programs were implemented 4 days per week over 23 weeks.

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Study Example -- Strong Evidence

Children in the READ 180 intervention participated in three 20-min literacy activities, including (1) individualized computer-assisted reading instruction with videos, leveled text, and word study activities, and (2) independent and modeled reading practice with leveled books.

Children in the district after-school program participated in a 60-min program in which teachers were able to select from 16 different enrichment activities that were designed to improve student attendance.

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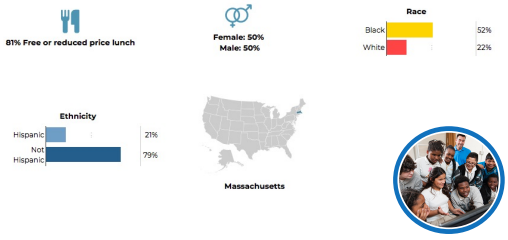
Study with **Strong Evidence**



90

Study Example -- Strong Evidence

There was no significant difference between children in READ 180 and the district after-school program on norm-referenced measures of word reading efficiency, reading comprehension, and vocabulary.

Although READ 180 had a positive impact on oral reading fluency and attendance, these effects were restricted to children in Grade 4.

91

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Study Example -- Strong Evidence

Print exposure, as measured by the number of words children read on the READ 180 computer lessons, **explained 4% of the variance in vocabulary and 2% of the variance in word reading efficiency after all pretest reading scores were partialed out.**

92

92

Study Example -- Strong Evidence

As of January 2017, the initial start-up cost of a *READ 180® Universal* package for 60 students was approximately $43,000.

A *READ 180® Universal* upgrade kit for 30 students costs $11,000. An upgrade kit with 60 student licenses costs $15,000.

Kahoot!

93

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Intervention Rating Worksheet

		Intervention 1	Intervention 2	Intervention 3
	Name of Intervention:			
a	RIGOR: (Circle one) How good is the research?	Strong Moderate Promising	Strong Moderate Promising	Strong Moderate Promising
b	RELEVANCE: (Circle one) How close to your population?	Very Similar Somewhat Not Similar	Very Similar Somewhat Not Similar	Very Similar Somewhat Not Similar
c	RETURN: (Circle one) What's the effect size?	Large Medium Small/None	Large Medium Small/None	Large Medium Small/None
d	Estimated cost/yr. Consider both starting costs and upkeep			
d	Recommended for Further Consideration? (Circle one)	Highly Recommended Somewhat Recommended Not Recommended	Highly Recommended Somewhat Recommended Not Recommended	Highly Recommended Somewhat Recommended Not Recommended

94

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Study Example -- Moderate Evidence

Waite, R.D. (2000).

A study of the effects of Everyday Mathematics on student achievement of third-, fourth-, and fifth-grade students in a large north Texas urban school district (Doctoral dissertation).

Kahoot!

95

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Study Example -- Moderate Evidence

The study sample consisted of third-, fourth-, and fifth-grade students. **Six schools within one district volunteered** to implement the first edition of Everyday Mathematics® during the 1998–99 school year.

A **comparison group of 12 schools within the same school district was selected**. Comparison schools did not use Everyday Mathematics® during the 1998–99 school year.

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Study Example -- Moderate Evidence

The study **matched the 12 comparison schools to the intervention schools based on ethnicity, socioeconomic status** (measured by the proportion of students that participated in the free or reduced-price lunch program), **and prior student mathematics scores** (measured by the Iowa Test of Basic Skills [ITBS]).

The analytic sample consisted of 732 students in 52 classes among the six intervention schools and 2,704 students among the 12 comparison schools.

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Study with **Moderate Evidence**

98

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Study Example -- Moderate Evidence

The primary outcome used to measure student mathematics achievement was the Total Math Score from the 1999 Texas Assessment of Academic Skills (TAAS).

The study reports an overall mean gain of 11 percentile points for the intervention group, a statistically significant difference compared to the control group.

99

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Study Example -- Moderate Evidence

Curriculum sets for *Everyday Mathematics*® are bundled by grade and are available for pre-K–6. The classroom resource packages for grades 1–6 cost $263.52.

Additional materials range in cost from $8.58 for a Skills Link Student Book to $526.65 for a classroom Manipulative Kit.

Kahoot!

100

100

Intervention Rating Worksheet

		Intervention 1	Intervention 2	Intervention 3
	Name of Intervention:			
a	RIGOR: (Circle one) How good is the research?	Strong Moderate Promising	Strong Moderate Promising	Strong Moderate Promising
b	RELEVANCE: (Circle one) How close to your population?	Very Similar Somewhat Not Similar	Very Similar Somewhat Not Similar	Very Similar Somewhat Not Similar
c	RETURN: (Circle one) What's the effect size?	Large Medium Small/None	Large Medium Small/None	Large Medium Small/None
d	Estimated cost/yr Consider both starting costs and ongoing			
e	Recommended For Further Consideration? (Circle one)	Highly Recommended Somewhat Recommended Not Recommended	Highly Recommended Somewhat Recommended Not Recommended	Highly Recommended Somewhat Recommended Not Recommended

101

101

Study Example -- Promising Evidence

Marion, G. (2004).

An examination of the relationship between students' use of Fast ForWord reading program and their performance on standardized assessments in elementary schools.

Kahoot!

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Study Example -- Promising Evidence

This study was conducted in four elementary schools in Tennessee using students enrolled in the fifth and sixth grades. The Fast ForWord reading program was provided to all students in three of the elementary schools and not provided in the fourth elementary school. **The 83 students who were enrolled in Fast ForWord served as the study group and 126 students who were not enrolled served as the control group.**

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Study Example -- Promising Evidence

- The study analyzed **relationships** of both students who received Fast ForWord and those who did not receive Fast ForWord.

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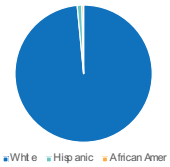
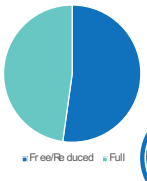
Study with **Promising Evidence**

Race



SES



105

Study Example -- Promising Evidence

Students in the Fast ForWord group scored on average 9 points higher (100 point test) than students in the No Fast ForWord group in Reading, and 6 points higher in Language.

Annual school site license cost: $21,000

Kahoot!

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Intervention Rating Worksheet

		Intervention 1	Intervention 2	Intervention 3
	Name of Intervention:			
a	RIGOR: (Circle one) How good is the research?	Strong Moderate Promising	Strong Moderate Promising	Strong Moderate Promising
b	RELEVANCE: (Circle one) How close to your population?	Very Similar Somewhat Not Similar	Very Similar Somewhat Not Similar	Very Similar Somewhat Not Similar
c	RETURN: (Circle one) What's the effect size?	Large Medium Small/None	Large Medium Small/None	Large Medium Small/None
d	Estimated cost/yr Consider both starting costs and ongoing			
e	Recommended For Further Consideration? (Circle one)	Highly Recommended Somewhat Recommended Not Recommended	Highly Recommended Somewhat Recommended Not Recommended	Highly Recommended Somewhat Recommended Not Recommended

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Questions

108

108

Lunch

109

109

By the end of the day, you will be able to

- Use multiple websites designed to disseminate research
- Gain insight into *strategies* with strong research basis
- Apply what you've learned to evaluate and vet interventions that are evidence based and cost efficient for your school or district

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Finding Interventions

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Before we start…what's an intervention?

- Packaged programs, software or program subscription, curricula
- Others are strategies and practices (job embedded professional development, increased learning time, social skills training)
- Can use funds for both types

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What Works Clearinghouse

- https://ies.ed.gov/ncee/wwc/FWW
- Federal service (Institute of Education Sciences)
- WWC does not conduct studies
- Reviews educational research for quality, and findings
- Ratings do not exactly align to ESSA standards
- Can be confusing
- Studies often >3 years old

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	Strong Evidence	Moderate Evidence	Promising Evidence
Level of Evidence	Category One		
Demonstrated Effects	Statistically significant positive effect	Statistically significant positive effect	Statistically significant positive effect
"This intervention…."	CAUSES ….."	CAUSES….."	WAS RELATED TO….."
What Works Clearinghouse (WWC) Designation	Meets WWC Standards WITHOUT Reservations	Meets WWC Standards WITH Reservations	NONE

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What Works Clearinghouse

- https://ies.ed.gov/ncee/wwc/FWW

Problem 1: My middle school needs to improve student reading comprehension. How can I find evidence-based interventions for this?

115

115

What Works Clearinghouse

- https://ies.ed.gov/ncee/wwc/FWW

Problem 2: My high school students need Algebra help. HELP!

116

116

What Works Clearinghouse

- https://ies.ed.gov/ncee/wwc/FWW

Problem 3: My teachers need help with writing instruction in elementary school.

117

117

What Works Clearinghouse

- https://ies.ed.gov/ncee/wwc/FWW

Problem 4: I've heard a lot lately about the Connected Mathematics Project (CMP) curriculum. How can I find out more before I consider buy it?

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WWC Scavenger Hunt

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WWC Scavenger Hunt Competition

Get ready to compete!

Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app

120

In the studies for SuccessMaker® (Adolescent Literacy), what did WWC reviewers find in terms of effectiveness?

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121

In the studies for SuccessMaker® (Adolescent Literacy), what did WWC reviewers find in terms of effectiveness?

- The program is effective
- The program had no effects
- The program had mixed effects
- The program had negative effects

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In the practice guide on Improving Reading Comprehension in Kindergarten Through Third Grade, what did researchers find had the STRONGEST evidence?

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123

In the practice guide on Improving Reading Comprehension in Kindergarten Through Third Grade, what did researchers find had the STRONGEST evidence?

- Guiding students through focused discussion on text meaning
- Teaching students to identify text structures
- Teaching students to use reading comprehension strategies
- Selecting texts purposefully to support comprehension

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124

Are there any interventions recommended by WWC for Geometry?

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125

Are there any interventions recommended by WWC for Geometry?

- Yes, Cognitive Tutor Geometry
- Yes, something else besides Cognitive Tutor Geometry
- No

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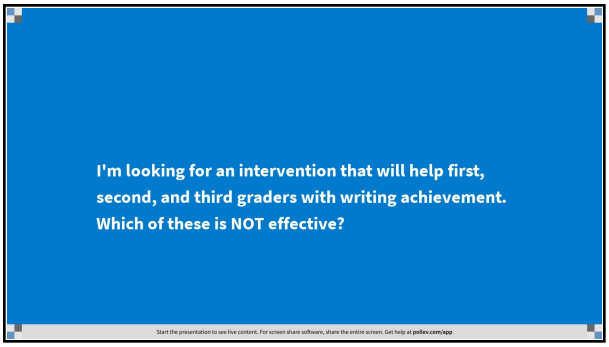
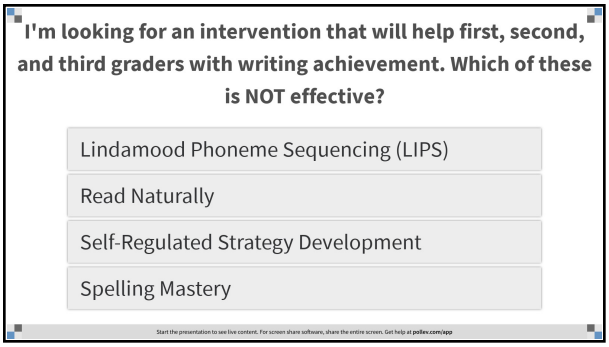
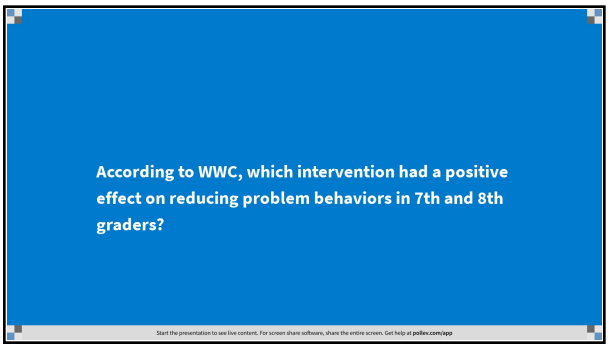

I'm looking for an intervention that will help first, second, and third graders with writing achievement. Which of these is NOT effective?
Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app

127


I'm looking for an intervention that will help first, second, and third graders with writing achievement. Which of these is NOT effective?
Lindamood Phoneme Sequencing (LIPS)
Read Naturally
Self-Regulated Strategy Development
Spelling Mastery
Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app

128


According to WWC, which intervention had a positive effect on reducing problem behaviors in 7th and 8th graders?
Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app

129

According to WWC, which intervention had a positive effect on reducing problem behaviors in 7th and 8th graders?

- Connect with Kids
- Facing History and Ourselves
- Franklin Covey's The Leader in Me
- Functional Behavioral Assessment-Based Interventions

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130

In general, studies have found that Teach for America (TFA) has positive effects on student achievement in

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131

In general, studies have found that Teach for America (TFA) has positive effects on student achievement in

- Reading
- Mathematics and Science
- Mathematics
- Science

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132

The WWC reviewers found one study on Great Explorations in Math and Science (GEMS) Space Science Sequence for Science. What do you know about the sample characteristics?

Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app

133

The WWC reviewers found one study on Great Explorations in Math and Science (GEMS) Space Science Sequence for Science. What do you know about the sample characteristics?

- Most of the students qualified for free/reduced price lunch
- They lived in Massachusetts
- Only 2% were English language learners
- They were in grades 2-3

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134

Success rates of Path to Graduation interventions vary. Overall, do Dual Enrollment programs seem to help students stay in school?

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135

Success rates of Path to Graduation interventions vary. Overall, do Dual Enrollment programs seem to help students stay in school?

- Yes
- WWC doesn't examine dual enrollment programs
- No
- Cannot tell from the evidence

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Evidence for ESSA

- https://www.evidenceforessa.org
- Robert Slavin at Johns Hopkins University
- 2017
- Aligns exactly to ESSA levels (Strong, Moderate, Promising)
- No longer only Reading and Math

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Notice Effect Sizes

- Take a minute to look around Evidence for ESSA
- What do you notice about effect sizes across interventions?

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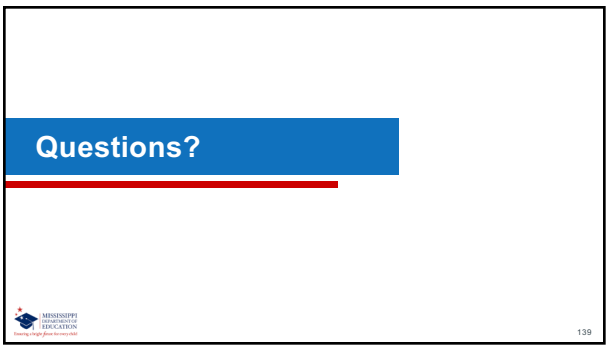

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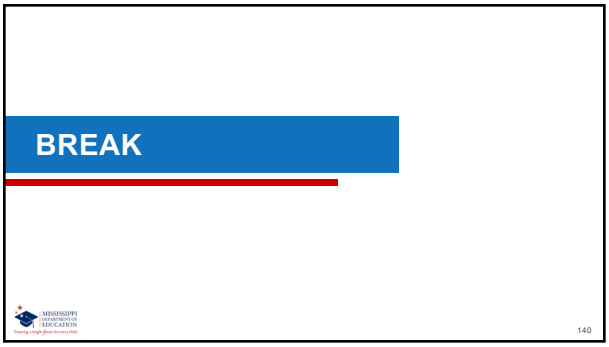

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Other Resources

Website Independent Review Sites

- The IRIS Center at Vanderbilt: https://iris.peabody.vanderbilt.edu/resources/ebp_summaries/
- Doing What Works: https://dww.library.wested.org
- New York State Education Department: http://www.nysed.gov/accountability/evidence-based-interventions
- Ed Reports: https://www.edreports.org/compare/results/ela-hs
- Best Evidence Encyclopedia: http://www.bestevidence.org
- OSI Website at MDE

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Putting it Together

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Guided Practice—Maple Street U.E.

Step One: Identify a major or especially pressing problem

Step Two: Identify a specific outcome or objective. Consider population.

(Step Three: Will help you consider barriers and assets)

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Intervention Rating Toolkit

Step One: Think about your educational setting (school or district). Based on a needs assessment, conversations with stakeholders, 1003-A plan, or other analysis, identify the problem or issue that you wish to address with this intervention or funding stream.

Step Two: Identify the specific outcome(s) you're hoping to achieve. Be explicit in your objective—it should be clear and measurable. Then write the population you wish to serve or address—do all students need the intervention or are there specific groups or subgroups?

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Guided Practice—Maple Street U.E.

Step Four: Choose 3 interventions to evaluate

Step Five: Complete the worksheet for each

Step 6: Examine Costs

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Step Three: What are some interventions you've already used to address the issue or problem? Were they effective, somewhat effective, or not at all? If previous interventions were successful, what were the supports that helped promote success? Are those still available? If previous interventions did not yield the desired results, why not? Will those barriers to success still be a factor? How will you address them going forward?

Step Four: What interventions are you considering implementing to meet the goals you established above? Choose up to 2-3 and list them here.

Next, select ONE of the interventions under consideration from the box above and carry it over to the next page (Step 5). You will repeat the process for each of the three interventions on the rating worksheets that follow.

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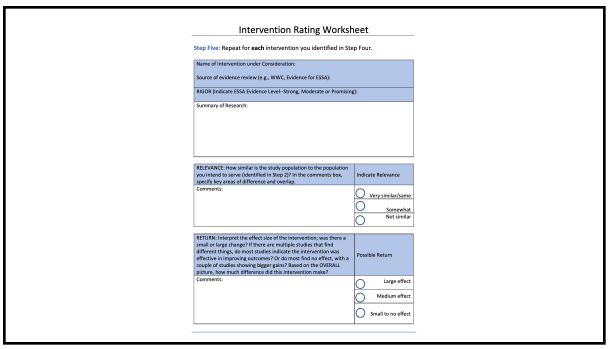

Intervention Rating Worksheet

Step Five: Repeat for **each** intervention you identified in Step Four.

Name of Intervention under Consideration:
Source of evidence review (e.g., WWC, Evidence for ESSA):
RIGOR (Indicate ESSA Evidence Level--Strong, Moderate or Promising):
Summary of Research:

RELEVANCE: How similar is the study population to the population you intend to serve (identified in Step 2)? In the comments box, specify key areas of difference and overlap.	Indicate Relevance
Comments:	○ Very similar/same ○ Somewhat ○ Not similar

RETURN: Interpret the effect size of the intervention: was there a small or large change? If there are multiple studies that find different things, do most studies indicate the intervention was effective in improving outcomes? Or do most find no effect, with a couple of studies showing bigger gains? Based on the OVERALL picture, how much difference did this intervention make?	Possible Return
Comments:	○ Large effect ○ Medium effect ○ Small to no effect

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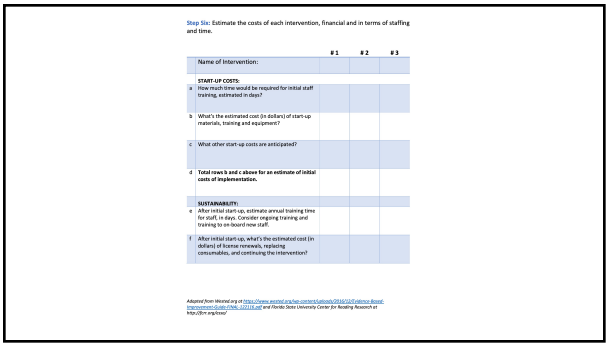

Step Six: Estimate the costs of each intervention, financial and in terms of staffing and time.

		# 1	# 2	# 3
	Name of Intervention:			
	START-UP COSTS:			
a	How much time would be required for initial staff training, estimated in days?			
b	What's the estimated cost (in dollars) of start-up materials, training and equipment?			
c	What other start-up costs are anticipated?			
d	**Total rows b and c above for an estimate of initial costs of implementation.**			
	SUSTAINABILITY:			
e	After initial start-up, estimate annual training time for staff, in days. Consider ongoing training and training to on-board new staff.			
f	After initial start-up, what's the estimated cost (in dollars) of license renewals, replacing consumables, and continuing the intervention?			

Adapted from WestEd.org at https://www.wested.org/wp-content/uploads/2016/12/Evidence-Based-Interventions-Guide-ESSA-122116.pdf and Florida State University Center for Reading Research at http://cfrr.org/essa/

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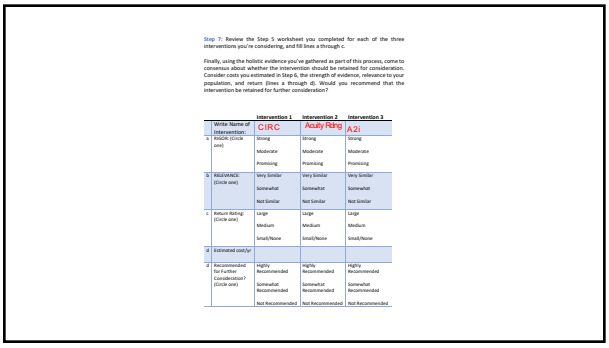

Step 7: Review the Step 5 worksheet you completed for each of the three interventions you've considering, and fill lines a through c.

Finally, using the holistic evidence you've gathered as part of this process, come to consensus about whether the intervention should be retained for consideration. Consider costs you estimated in Step 6, the strength of evidence, relevance to your population, and return (lines a through d). Would you recommend that the intervention be retained for further consideration?

		Intervention 1	Intervention 2	Intervention 3
	Write Name of Intervention:	CIRC	Acuity Rthg	A2i
a	RIGOR: (Circle one)	Strong Moderate Promising	Strong Moderate Promising	Strong Moderate Promising
b	RELEVANCE: (Circle one)	Very Similar Somewhat Not Similar	Very Similar Somewhat Not Similar	Very Similar Somewhat Not Similar
c	Return Rating: (Circle one)	Large Medium Small/None	Large Medium Small/None	Large Medium Small/None
d	Estimated cost/yr			
d	Recommended for Further Consideration? (Circle one)	Highly Recommended Somewhat Recommended Not Recommended	Highly Recommended Somewhat Recommended Not Recommended	Highly Recommended Somewhat Recommended Not Recommended

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Step 7: Review the Step 5 worksheet you completed for each of the three interventions you're considering, and fill lines a through c.

Finally, using the holistic evidence you've gathered as part of this process, come to consensus about whether the intervention should be retained for consideration. Consider costs you estimated in Step 6, the strength of evidence, relevance to your population, and return (lines a through d). Would you recommend that the intervention be retained for further consideration?

		Intervention 1	Intervention 2	Intervention 3
	Write Name of Intervention:	CIRC	Acuity Rdng	A2i
a	RIGOR: (Circle one)	Strong Moderate Promising	Strong Moderate Promising	Strong Moderate Promising
b	RELEVANCE: (Circle one)	Very Similar Somewhat Similar Not Similar	Very Similar Somewhat Similar Not Similar	Very Similar Somewhat Similar Not Similar
c	Return Rating: (Circle one)	Large Medium Small/None	Large Medium Small/None	Large Medium Small/None
d	Estimated cost/yr	75,000	1,525	17,500
d	Recommended for further Consideration? (Circle one)	Highly Recommended Somewhat Recommended Not Recommended	Highly Recommended Somewhat Recommended Not Recommended	Highly Recommended Somewhat Recommended Not Recommended

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VETTING VENDOR CLAIMS

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THINK LIKE A VENDOR

- What would you emphasize?
- What would you de-emphasize or omit?
- How can you make your product look terrific for OVERALL ACHIEVEMENT EFFECTS?
- How about IMPROVEMENT EFFECTS?
- Vendor-funded research
- What questions do you have/what have you seen?

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Wrap Up Discussion

- First, decide who will speak for your group when we debrief in about 10 minutes.
- When looking for evidence-based interventions (includes strategies, resources, purchased resources, consultants, etc), how do you ensure that you stay focused on finding the BEST strategies/resources for your students, and not simply on compliance?
- What is your process for finding the best interventions? How involved are you? Who are the key people that should be involved?
- When dealing with vendors or consulting companies, what questions are you asking? How do you vet their claims?

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Ensuring a bright future for every child

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