Be an ESSA Investigator: Using Evidence to Guide Decision Making

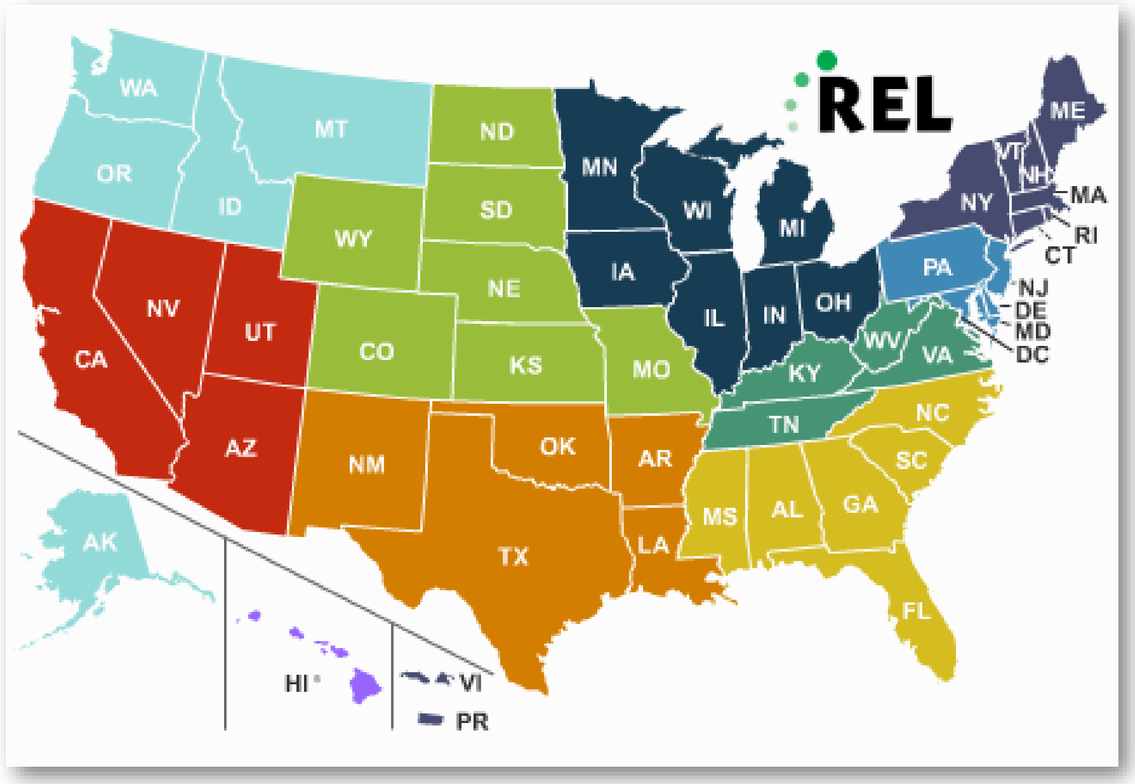
Teachers' Institute and Leading Change
June 9, 2021

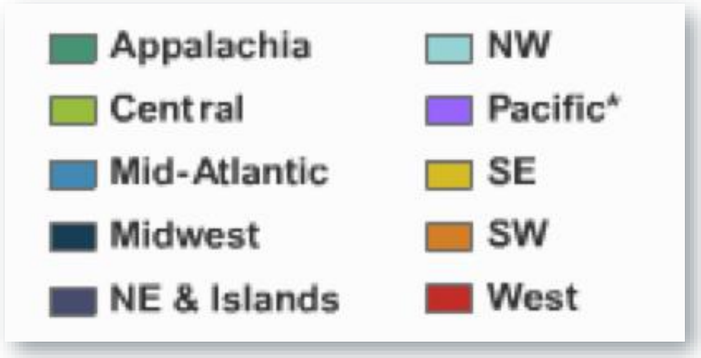
Dr. Amy Boza
Director of English/Language Arts and MOWR
Academic Standards
Arizona Department of Education

Dr. Lenay Dunn
Deputy Director
Regional Educational Laboratory West (REL West), WestEd

IES Institute of Education Sciences

Ten RELs work in partnership with LEAs, SEAs, and others to use data and research to improve academic outcomes for students





Regional Educational Laboratories (RELs): Three Main Activities

- ✔ Conduct applied research
- ✔ Facilitate the flow of actionable, credible, up-to-date research evidence
- ✔ Provide technical support around data collection, evidence use, and research

Arizona Department of Education

Becoming ESSA Investigators

ADE Move On When Reading

Arizona Department of Education

MOWR Move On When Reading

The Road to Understanding ESSA

- A focus on "evidence-based activities, strategies, or interventions"
- ADE ELA team met with the WestEd REL West team to receive coaching and authentic practice
- Time to share that experience with you

MOWR
Move On When Reading

Video Series

https://www.azed.gov/mowr/mowr-for-administrators

- Video 1 – Why do we talk about ESSA in Arizona?
- Video 2 – Overview of ESSA Evidence Provisions
- Video 3 – Evidence-Based Improvement
- Video 4 – Using Evidence for ESSA and What Works Clearinghouse to Research Reading Programs
- Video 5 – Reading a Study
- Video 6 – Exploring the Body of Evidence for a Selected Program
- Video 7 – Evaluating Evidence for Your Context
- Video 8 – Determining Approval for MOWR
- Video 9 – Looking Beyond Curriculum

MOWR
Move On When Reading

The Team

ADE ELA/MOWR Team:

Dr. Amy Boza –
Director of K-12 ELA Standards and Move On When Reading
Amy.Boza@azed.gov

Sarah Bondy –
K-3 Early Literacy Specialist
Sarah.Bondy@azed.gov

Lauren Spenceley –
Secondary ELA Specialist
Lauren.Spenceley@azed.gov

REL West Team:

Regional Educational Laboratory West (REL West) at WestEd

Dr. Lenay Dunn
Deputy Director

Eric Ambroso
Research Assistant

relwest@wested.org

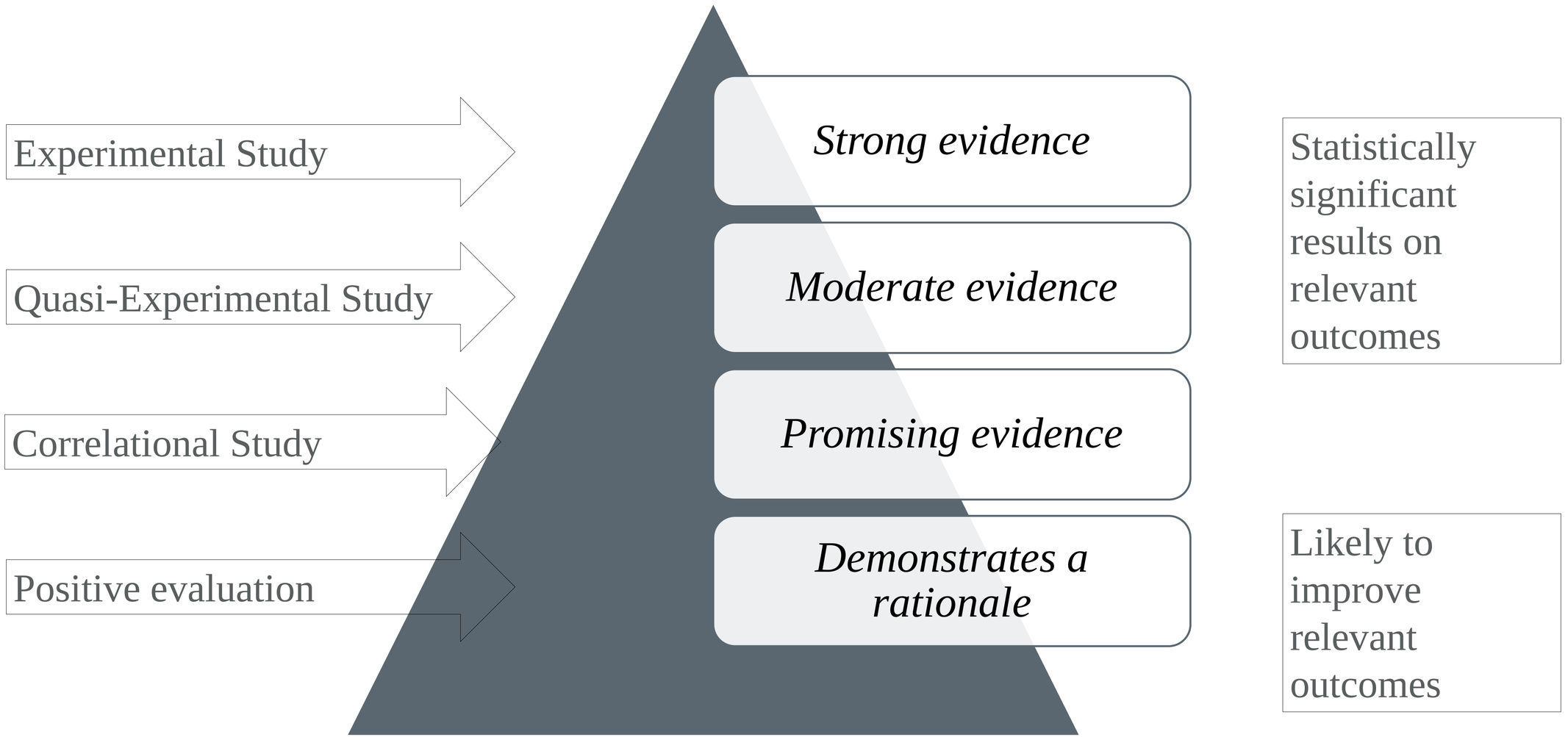
MOWR
Move On When Reading

ESSA Evidence Levels

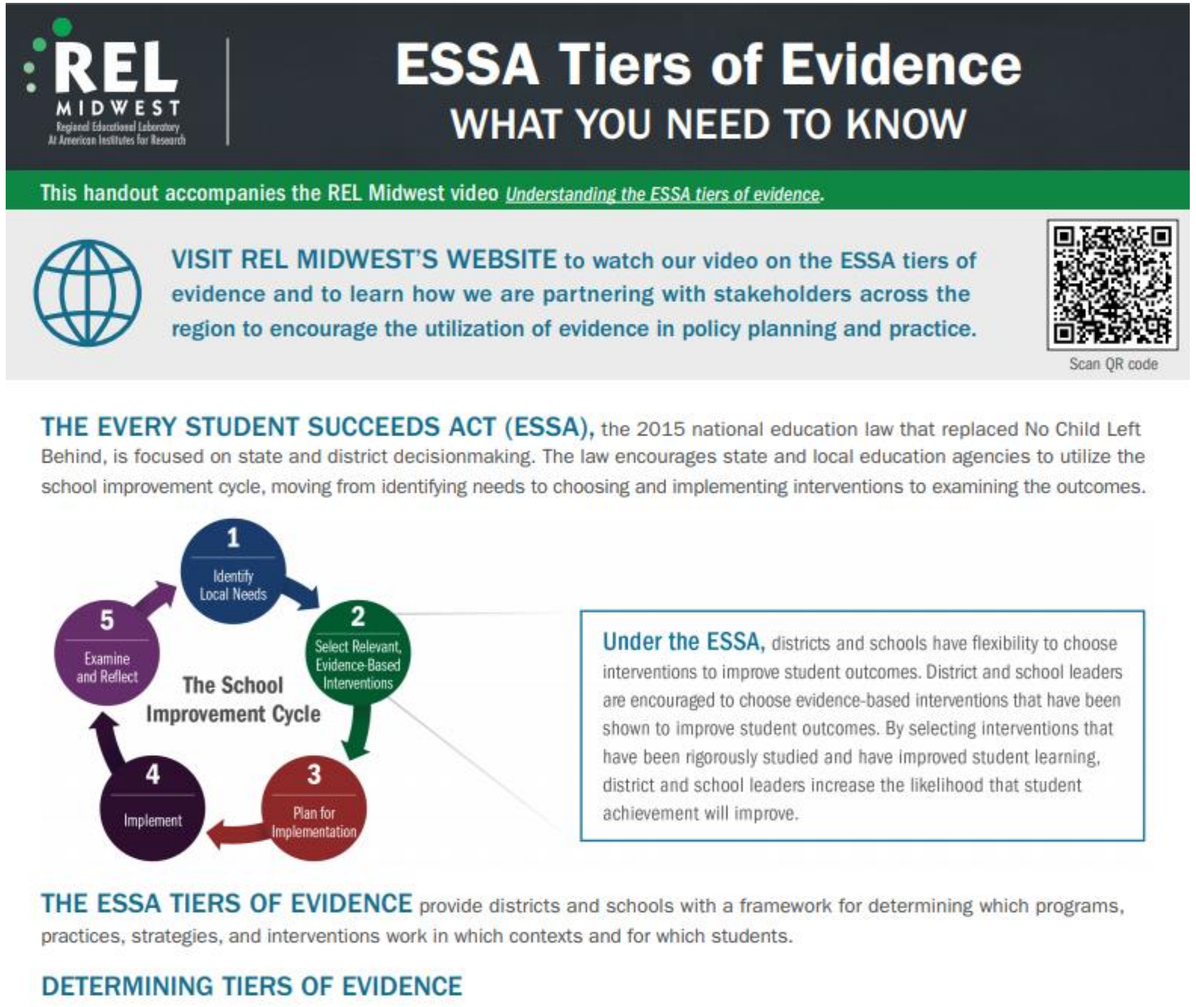
What do you think of when you hear the word “evidence”?

What do you think of when you hear the phrase “ESSA evidence levels”?

ESSA Evidence Levels



ESSA Tiers of Evidence Resource



REL MIDWEST
Regional Educational Laboratory
At American Institutes for Research

ESSA Tiers of Evidence
WHAT YOU NEED TO KNOW

This handout accompanies the REL Midwest video *Understanding the ESSA tiers of evidence*.

VISIT REL MIDWEST'S WEBSITE to watch our video on the ESSA tiers of evidence and to learn how we are partnering with stakeholders across the region to encourage the utilization of evidence in policy planning and practice.

Scan QR code

THE EVERY STUDENT SUCCEEDS ACT (ESSA), the 2015 national education law that replaced No Child Left Behind, is focused on state and district decisionmaking. The law encourages state and local education agencies to utilize the school improvement cycle, moving from identifying needs to choosing and implementing interventions to examining the outcomes.

Under the ESSA, districts and schools have flexibility to choose interventions to improve student outcomes. District and school leaders are encouraged to choose evidence-based interventions that have been shown to improve student outcomes. By selecting interventions that have been rigorously studied and have improved student learning, district and school leaders increase the likelihood that student achievement will improve.

THE ESSA TIERS OF EVIDENCE provide districts and schools with a framework for determining which programs, practices, strategies, and interventions work in which contexts and for which students.

DETERMINING TIERS OF EVIDENCE

https://ies.ed.gov/ncee/edlabs/regions/midwest/pdf/blogs/RELMW-ESSA-Tiers-Video-Handout-508.pdf

Statistical Significance Differs from Effect Size

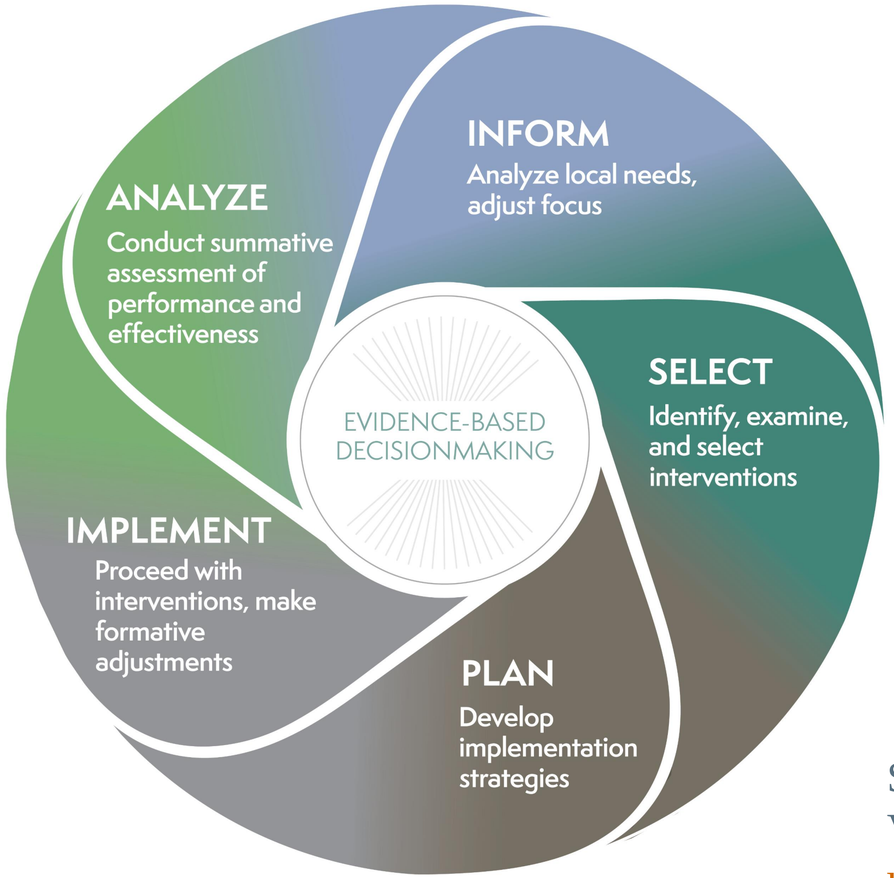
Statistical Significance

The determination that the difference between treatment and control group outcomes are caused by something other than chance.

Effect Size

The numeric measurement of the strength of the difference between the treatment and control group outcomes.

Framework: Evidence-Based Improvement



Source: Hale, Dunn, Filby, Rice, & Van Houten (2017).

https://www.wested.org/resources/evidence-based-improvement-essa-guide-for-states/

Considerations

Subjectivity/Bias

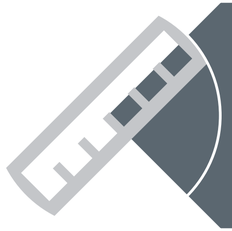
Research Design/Outcomes

Relevance/Context

Subjectivity/Potential Bias Considerations

Were the results of the study subject to **peer review**?

Was the study conducted by **independent** third-party researchers/evaluators? Who funded the study?



Were the study's outcome measures designed by the intervention's developers, or did the researchers rely on **established measure(s) from outside sources**?

Research Design Considerations

Is **anecdotal** evidence (e.g., a testimonial) the only evidence?

Did the study rely on a **small sample** to draw its conclusions?

Did the study rely on pre/post-testing the same group, without a **comparison group**?

Comparison Group Considerations

If the study did have a **comparison group:**

Were subjects **randomly assigned** to the comparison group or to the intervention?

If they were not randomly assigned, is there evidence that the treatment and comparison groups were comparable in meaningful ways (i.e., **baseline equivalence**)?

Was **attrition** from either group above 20 percent?

Research Outcomes Considerations

Was there a **positive and statistically significant effect on a relevant outcome** (i.e., one that matches the aims of the program)? Were the results positive across all relevant outcomes?

What was the **effect size** or magnitude of the positive impact?

- Note: A study sample can be so large as to find statistically significant differences that are not very meaningful. ESSA evidence levels do not consider or include effect size.

How well does the study population and setting match your setting?

Summary of Elements
Peer Review
Independent Researchers
Established Measure
Sample Size
Research Design (e.g., RCT, Quasi-Experimental, Correlational)
Outcome
Effect Size
Match to Your Setting

Sample Efficacy Study of a Reading Intervention

- Intervention: K–2 reading intervention program to bring struggling students up to grade level, typically provided for 90 days.
- Author: Conducted by a university-affiliated research center published in a peer-reviewed journal.
- Design: Randomized Controlled Trial (RCT) that lasted for 180 days.
- Sample: 427 student participants in 9 schools across two school districts (one rural, one suburban); 85% economically disadvantaged, 4% English learners, and 9% eligible for special education services; 37% Hispanic, 34% African American, and 29% White. 60 students dropped out of the study though the study did not specify how many from the treatment or control groups. Baseline scores for each group were reported.
- Overall Results: Students in K and grade 1 assigned to the intervention had statistically significantly higher scores on the aligned program assessment and DIBELS compared to K and grade 1 students in the control group. Students in grade 2 assigned to the intervention had statistically significantly higher scores, compared to grade 2 students in the control group, on the aligned program assessment only. No effect size was reported.
- Subgroup Results: All subgroup findings mirrored the main findings except English learners in the treatment group did not make statistically significant achievement gains compared to English learners in the control group. This was true in all grades studied.

Discussion

- What evidence level do you think this study meets and why?
- What more do you need to know about the study to help you determine which evidence tier it meets?
- Were there any subjectivity/potential bias considerations/questions?
- Were there any research design/outcomes considerations/questions?

Study: Sample Efficacy Study of a Reading Intervention	
Element	**Rationale**
Peer Review	Published in a peer-reviewed journal
Independent Researchers	University-affiliated research center
Established Measure	DIBELS and program-embedded assessment
Sample Size	427, but 60 dropped out – not sure from which group
Research Design	Described as an RCT that lasted 180 days (more than twice as long as the program itself); would need more information to determine if the RCT was well-designed and well-implemented
Outcome	K and 1st grade students in the treatment group had statistically significantly positive outcomes on both assessments compared to the control group; 2nd grade only on the program-embedded assessment; ELs did not make statistically significant gains
Effect Size	None reported
ESSA Evidence Tier	Would likely meet one of the top 3 tiers
Match to Your Setting	Especially given the non-significant results for ELs, would need to consider how this would meet your context and student needs

Sample Efficacy Study: Core Reading Program

- Intervention: Core reading program that emphasizes phonics mastery.
- Author: Conducted by the research team of the program publisher and published internally.
- Design: Treatment and comparison groups followed over one semester; no pre-test measures.
- Sample: 2,000 student participants in 10 schools in a suburban district; 15% economically disadvantaged, 3% English learners, and 10% eligible for special education services; 25% Hispanic, 15% African American, and 60% White. No report of how many students dropped out of the study.
- Overall Results: Students who received instruction in the core reading program performed better than students who did not, as measured by the state language arts exam. The differences were statistically significant at $p<.05$. The reported effect size was .35.
- Subgroup Results: Results were consistent across subgroups.

Discussion

- What evidence level do you think this study meets and why?
- What more do you need to know about the study to help you determine which evidence tier it meets?
- Were there any subjectivity/potential bias considerations/questions?
- Were there any research design/outcomes considerations/questions?

Study: Sample Efficacy Study of a Core Reading Program	
Element	**Rationale**
Peer Review	
Independent Researchers	
Established Measure	
Sample Size	
Research Design	
Outcome	
Effect Size	
ESSA Evidence Tier	
Match to Your Setting	

Final Reflections: Capacity

- What resources do you have to identify research?
- How will you conduct research reviews?
  (There is no “one way” to do so!)
- What is the capacity of your district/schools to conduct research reviews?
- To what extent and how will you judge the reviews of research/evidence that are done by outside sources?

Feedback Survey

Thank you!

This presentation was prepared for the Institute of Education Sciences (IES) under Contract ED-IES-17-C-0012 by Regional Educational Laboratory (REL) West at WestEd. The content of the presentation does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.