Be an ESSA Investigator: Using Evidence to Guide Decision Making

Teachers’ Institute and Leading Change
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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
Becoming ESSA Investigators

ADE 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
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
The Team

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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

Experimental Study
Quasi-Experimental Study
Correlational Study
Positive evaluation

Strong evidence
Statistically significant results on relevant outcomes

Moderate evidence

Promising evidence
Likely to improve relevant outcomes

Demonstrates a rationale
ESSA Tiers of Evidence Resource

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


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

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<td>Peer Review</td>
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<td>Established Measure</td>
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<td>Sample Size</td>
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<td>Research Design (e.g., RCT, Quasi-Experimental, Correlational)</td>
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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?
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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?
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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!

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