

*Empowering Schools for Success:
Using Effective Evidence-Based
Practices to Impact
Student Outcomes*



A resource guide from the Arkansas Department of Education

EVIDENCE-BASED INTERVENTIONS

Involved in one of the most important and rewarding careers, teachers are charged with providing instruction that impacts students' academic performance. The Elementary and Secondary Education Act (ESEA) has emphasized the importance of equal access to education and the establishment of high standards and accountability for over fifty years. Previously under No Child Left Behind (NCLB), districts and schools across the state utilized scientifically-based research as the foundation for educational interventions and programs. However, with the passage of the Every Student Succeeds Act (ESSA) in December 2015, the use of scientifically-based research has been replaced by “evidence-based interventions.”

Specifically, the purpose of the Every Student Succeeds Act (2015) is to “provide all children significant opportunity to receive a fair, equitable, and high-quality education, and to close educational achievement gaps”. Under ESSA, our state has a bigger role in holding school districts accountable.



[Overview for Evidence Based Practice Video](#)

Evidence-based interventions are practices or programs that have peer-reviewed, documented empirical evidence of improving outcomes when implemented.

Under ESSA, there are four tiers, or levels of evidence:

Tier 1: Strong Evidence - supported by one or more well-designed and well-implemented randomized control experimental studies.

Tier 2: Moderate Evidence - supported by one or more well-designed and well-implemented quasi-experimental studies.

Tier 3: Promising Evidence - supported by one or more well-designed and well-implemented correlational studies with statistical controls for selection bias.

Tier 4: Demonstrates a Rationale - practices that have a clear and effective logic model or theory of action, are supported by high-quality research, and have some effort underway by a (SEA, LEA, or research organization) to determine their effectiveness.

Tiers 1-3 demonstrate a statistically significant and positive impact on the desired outcome.

Title I School Improvement under Section 1003 requires higher degrees of evidence (Tiers 1-3) to support the use of a particular intervention. Other Title I and Title II-IV program requirements can be met using a less rigorous standard represented by Tier 4.

GENERAL QUESTIONS

What are evidence-based interventions?

Evidence-based interventions are programs, practices, strategies, or activities that have been proven to effectively impact student outcomes. School districts have confidence that activities will produce results when utilized, because the interventions are supported by definitive evidence.

Evidence-based practice (EBP) has spread in popularity in many health care disciplines and has been used in the field of medicine since 1996 and is defined as “the conscientious use of current best evidence in making decisions about patient care (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000). The term, when utilized from an education perspective substitutes “student” in the place of “patient”.

Why do evidence-based strategies matter?

ESSA gives districts the opportunity to redefine accountability for their schools and support high-quality education. The flexibility of utilizing these strategies allows districts to align programming to their specific needs. As part of a comprehensive picture of school success, the evidence-based strategy implemented can be tailored to overall support the improvement plan allowing success for each and every student.

What is the difference between “evidence based” and “research based”?

ESSA is charged with holding programs to higher standards through the use of its four tiers, or levels, of evidence. Programs are required to have undergone systemic evaluation that demonstrate higher levels of program effectiveness. The shift from “research based” to “evidence based” requires that the process of evaluation take place by someone other than the team that developed the strategy. This evaluation process will determine what, if any, level of evidence the strategy meets.

Research based practices create programming that provide a starting point in determining if a program is of sound practice and if it is determined to be grounded in research. They generate knowledge and validate existing knowledge. While this can still hold merit, the district may question if it is a high-quality program that should be implemented within their student population. In general:

- Evidence Based Practices: Review supporting evidence to demonstrate how the practice works
- Research Based Practices: Generate new knowledge and validate existing knowledge

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What must be considered to determine levels of evidence for a district?

Each school sets expectations through academic standards that have been determined by the state. As each school explores best evidence-based strategies, that best meet their needs, it must be determined if the strategy will have the same effect on specific student populations as with the general population. It should be noted that a strategy can only be considered Level 1 (strong) or Level 2 (moderate) strategy if it improves student outcomes for the same subgroup the district aims to support. For example, if a district plans to implement a strategy to enhance the educational outcomes of those with limited English language skills, it must be one that has been proven to work for ESL students. The needs of a specific student population are important regardless of the level of evidence. Level 3 or Level 4 options can be considered for unique needs on a case-by-case basis.

Are there other important considerations to keep in mind while selecting evidence-based strategies?

- When a school considers the addition of evidence-based strategies, it should verify that the practice meets the identified needs of the population under consideration.
- Cost and capacity must be reviewed when taking on new strategies to ensure they are cost effective and do not have a negative impact on current practices that may be in place.
- New programs adopted as designed may also require substantial training and the addition of personnel.

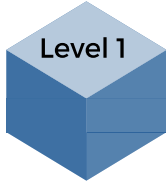
How are the recommendations for identifying evidence at each of the four levels differentiated?

The ESSA (Section 8002) and U.S. Department of Education's Non-Regulatory Guidance: Using Evidence to Strengthen Education Investments document, <https://www2.ed.gov/policy/elsec/leg/essa/guidanceuseseseinvestment.pdf>, outlines the four levels of evidence.

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The information below provides ESSA's definitions along with a definition and interpretation.

**Tier / Level
of Evidence**



**ESSA
Definitions**

How is this defined and what does that mean?

Strong
Evidence that is supported by one or more well-designed and well-implemented randomized control experimental studies.

Strong evidence comes from experimental studies that show a statistically and favorable effect of the intervention on a student outcome (for example, math scores; attendance rates). These types of studies assign students randomly to treatment or control groups.

These experimental studies meet the What Works Clearinghouse (WWC) evidence standards without reservations. They also do not contain unfavorable evidence on the same intervention in other studies that meet WWC Evidence Standards with or without reservations.

The research studies use large sample, multiple site samples containing at least 350 students. Note: If two or more present the same level of evidence, you can add the number of participants together.

Research shows that the strategy improves outcomes when the study has a sample that overlaps with the population (i.e., the types of students served) AND settings (e.g., rural, urban) proposed to receive the intervention.



Moderate
Evidence that is supported by one or more well-designed and well-implemented quasi-experimental studies.

Moderate evidences comes from quasi-experimental studies that show a statistically and favorable effect of the intervention on a student outcome (for example, math scores or attendance rates).

Quasi-experimental research shares similarities to experimental design but lack random assignment of students to treatment or control groups. Researchers use statistical matching methods and may also control assignment to treatment.

These well-designed and well-implemented studies meet the What Works Clearinghouse (WWC) evidence standards with reservations.

The research studies use large sample, multiple site samples containing at least 350 students.

Research shows that the strategy improves outcomes when the study has a sample that overlaps with the population (i.e., the types of students served) OR settings (e.g., rural, urban) proposed to receive the intervention.

Tier / Level
of Evidence



ESSA
Definitions

Promising
Evidence that is supported by at least one well-designed and well-implemented correlational study.

How is this defined and what does that mean?

Promising evidence comes from correlational studies that show a relationship between the strategy and outcome but cannot show causation. However, the strategy has been found to likely improve a relevant student outcome (for example, math scores or attendance rates). They do not have any of the controls involved in an experiment.

When causation is found, this means that the researchers found that changes in one variable they measured directly caused changes in the other variable.

The research studies **do not** have to be based on large sample, multiple site samples containing at least 350 students.

No other experimental or quasi-experimental research studies show that the strategy negatively impacts the outcome



Demonstrates a Rationale
Practices that have a clear and effective logic model or theory of action, are supported by high-quality research, and have some effort underway by a (SEA, LEA, or research organization) to determine their effectiveness.

Existing research does not allow the strategy to be defined as a Level 1, Level 2, or Level 3.

Based on current efforts to study the effects of the intervention, the strategy is likely to improve student outcomes.

Districts should consider the following before using a Level 4 strategy:

- o Field research support: In what ways has it been determined that this strategy will meet district needs?
- o Logic Model Development: How will the intervention being implemented likely improve relevant outcomes?
- o Evaluation Plan/Rubric: How will the district know this strategy is improving student outcomes

Why would a district consider a Level 4 strategy?

Utilization of the 4th level gives districts the freedom to consider strategies that allow them to innovate and explore new opportunities that show potential for improving student outcomes at the local level. As noted, before using a Level 4 strategy, districts should:

- **Field research support:** In what ways has it been determined that this strategy will meet district needs?
- **Logic Model Development:** How will the intervention being implemented likely improve relevant outcomes?
- **Evaluation Plan/Rubric:** How will the district know this strategy is improving student outcomes?

 [Theory of Action and Logic Model Video](#)

How do evidence-based strategies fit into a school's systemic plan for continuous improvement?

After a need is identified, schools can utilize evidence-based strategies that are tailored to better inform instruction and in return impact academic achievement. When school-level improvement plans are in place and the cycle of inquiry (plan-do-check) is continuously being implemented, evidence-based practices should be identified, executed, and evaluated.

RESOURCES

The following are additional resources educators can use to learn more about using evidence in education:

What Works Clearinghouse (WWC)

The WWC reviews existing research and provides educators with the information they need to make evidence-based decisions.

<https://ies.ed.gov/ncee/wwc/>

What Works Clearinghouse: Practice Guides

The practice guides provide educator recommendations from reviewed research, practitioner experiences, and information from nationally recognized experts.

<https://ies.ed.gov/ncee/wwc/PracticeGuides>

Evidence for ESSA

This site provides clear and authoritative information on evidence based reading and math programs that meet the ESSA evidence standards and enable educators and communities to select effective educational tools to improve student success.

<https://www.evidenceforessa.org>

WestEd

The agency works with education and other communities throughout the United States and abroad to promote excellence, achieve equity, and improve learning for children, youth, and adults.

<https://wested.org>

WestEd: The Center on School Turnaround (CST)

The center provides technical assistance to increase the capacity of state education agencies (SEAs) to support districts in turning around their lowest-performing schools. WestEd works with SEAs, local education agencies (LEAs), and Regional Comprehensive Centers to identify, adopt, and sustain research-based practices and emerging promising practices that ensure equity and drive system change to rapidly improve the lowest-performing schools.

<https://centeronschoolturnaround.org>