

Integrating Evidence-Based Practices Into the Continuous Improvement Cycle

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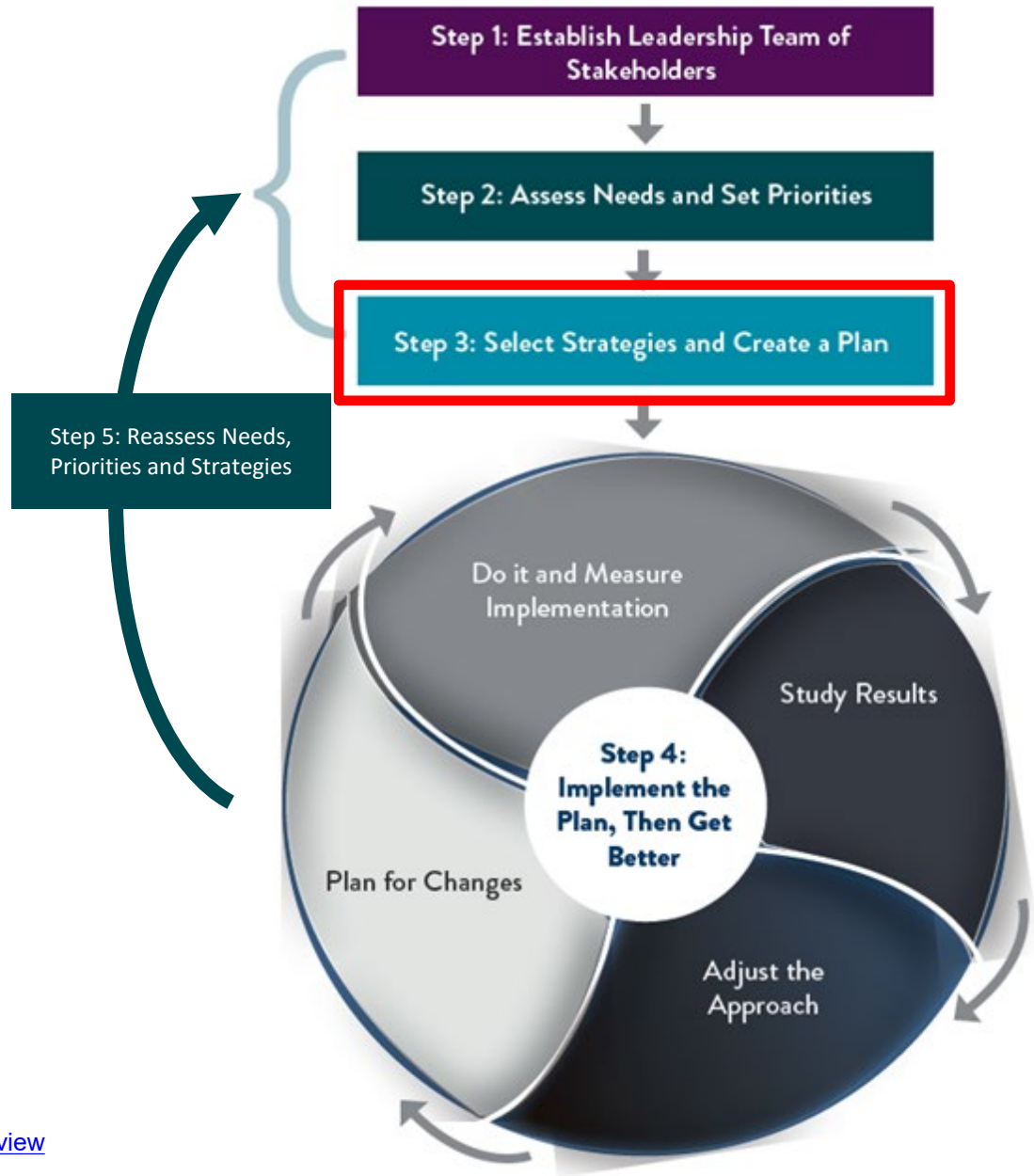
Objectives

- Understand the Every Student Succeeds Act (ESSA) evidence tiers (Part 1)
- Understand where practitioners can find evidence-based practices (Part 1)
- Consider common pitfalls related to using evidence-based practices throughout the continuous improvement cycle (Part 2)



Part 1: Finding and Selecting Evidence-Based Practices

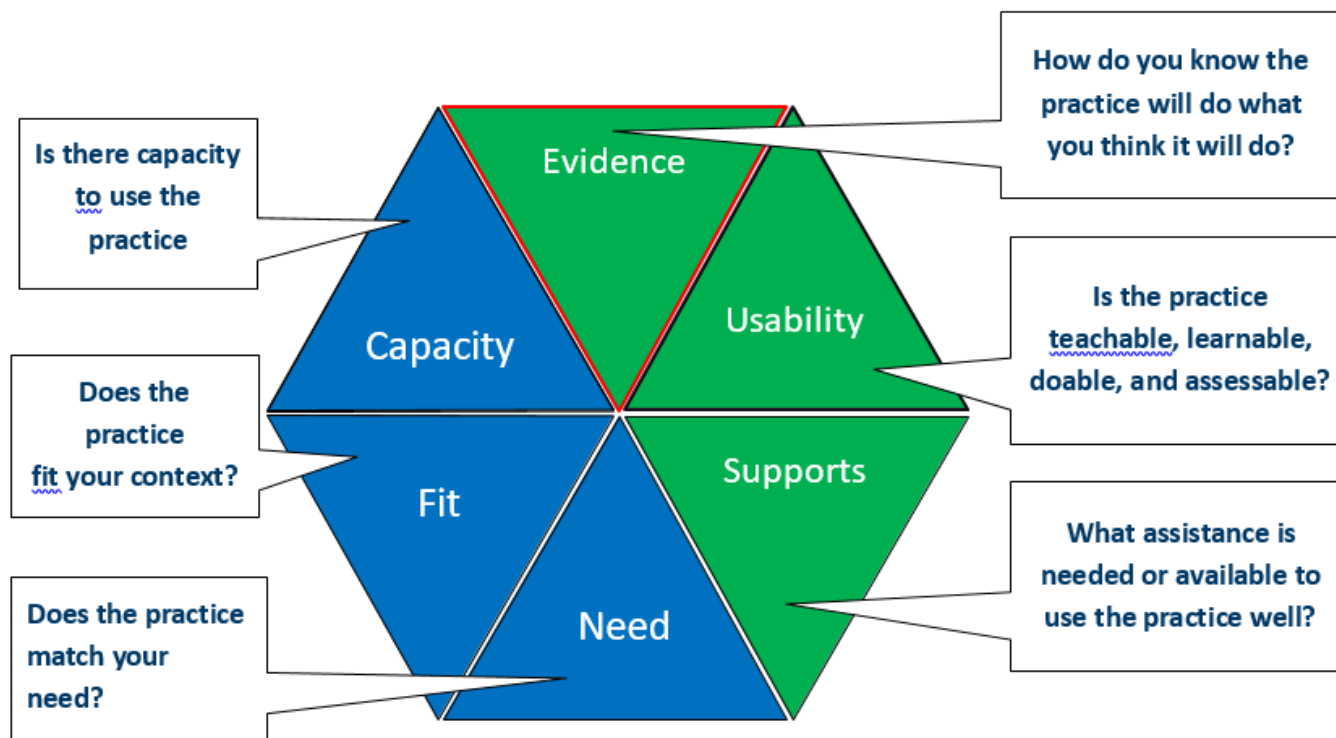
PreK–12 Continuous Improvement Process



From [Continuous Improvement Framework Overview](#)
(Minnesota Department of Education [MDE])

Many Decisions Factor Into Selecting Improvement Strategies (Step 3)

Level of evidence is just one of those decisions.



[The Hexagon: An Exploration Tool](#) (Metz & Louison, 2018)

Quick Check:
Who has an understanding of the ESSA
Evidence Tiers?

ESSA Evidence Tiers

At least 1 improvement practice in CSI and TSI schools must demonstrate a favorable statistically significant impact on outcomes based on Tier 1, 2 or 3 evidence.

Tier	Evidence rigor	
1	Strong evidence	Experimental study that is well-designed and well-implemented
2	Moderate evidence	Quasi-experimental study that is well-designed and well-implemented
3	Promising evidence	Correlational study with statistical controls for bias that is well-designed and well-implemented
4	--	<ul style="list-style-type: none">• Demonstrates a rationale based on high-quality research findings or a positive evaluation that the practice is likely to improve outcomes• Includes on-going efforts to examine the effects of the practice

(Source: Elementary and Secondary Education Act, 2015)

Evidence Sources

Districts must *find research* that studies the *proposed* practice from one of the following resources:

- **Online clearinghouses** that compile and evaluate research studies
- **Research studies** not evaluated in clearinghouses
- **Single study reviews** can be commissioned through the Institute of Education Sciences

The intervention may be a **current practice** (if the district finds a study for the practice that meets Tiers 1–3) or may be a **practice that is new** to your school/district.

Local Activity Around Federal Evidence Tiers

Turn and talk with a partner:

- **Are the federal tier requirements a priority in your district?**
- **What actions or conversations are happening in your district around the federal evidence tier requirements?**
- **What are some of the challenges you and your district are facing right now around the evidence tiers and evidence-based practices?**

Handout:

Evidence Tier Criteria for Evaluating a Study

ESSA Evidence Tier Criteria

At least **one** intervention for Comprehensive Support and Improvement (CSI) and Targeted Support and Improvement (TSI) schools must meet Tier 1, Tier 2 or Tier 3.

#	Tier Criterion	Tier 1		Tier 2		Tier 3	Tier 4
1	<i>Design rigor (minimum)</i>	Experimental Random assignment of participants to control and treatment	Meets WWC standards <u>without</u> reservations	Quasi-experimental Control and treatment groups <u>not random</u> (but purposeful)	Meets WWC standards <u>with</u> reservations	Correlational Well-designed correlational research	Logic model Based on high-quality research or positive evaluation
2	<i>Group equivalence</i>	Low attrition (baseline equivalence is assumed)		Higher attrition acceptable, but then must have baseline equivalence		Statistical controls for participant selection bias	n/a
3	<i>Statistically significant favorable effect (by outcome)</i>	✓		✓		✓	Includes evaluation plan
4	<i>No significant unfavorable effect from any Tier 1 or Tier 2 study (by outcome)</i>	✓		✓		✓	n/a
5	<i>Large study sample</i>	✓		✓		n/a	n/a

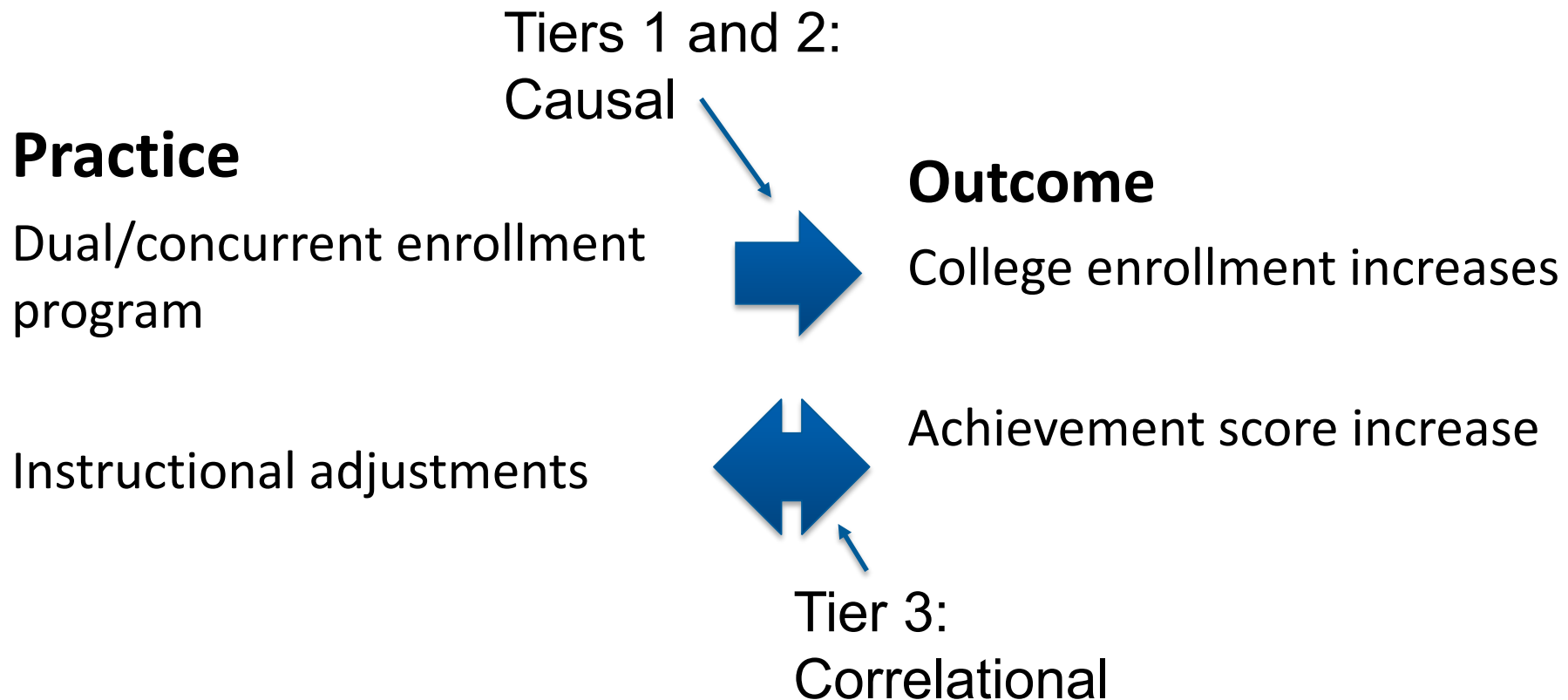
Slide Notations

- *Italics* on slides refer to the tier criterion used in the evidence tier table.
- Circled numerals in the upper right corners of slides correspond to the numbering in left column of the evidence tier table.

1

Research Design

“Evidence-based” refers to evidence of a significant relationship between a practice and an outcome.



Research Design continued

1

- **Tier 1 (highest tier)** experimental research randomly assigns research subjects (i.e., students) to control and treatment groups.
- **Tier 2** quasi-experimental research assigns research subjects control and treatment groups (non-randomly).
- **Tier 3** correlational research often looks at existing data to determine any relationship between practice and outcome.



Group Equivalence

- *Controls for bias* ensure that the study conclusions take into account student demographic factors and school factors like rural setting (Tier 3).
- *Baseline equivalence* means that the control and treatment groups have similar students (Tier 2).
- *Low attrition* refers to few students dropping out of the research study due to transferring schools, no parental consent, etc. (Tier 1)

Determining *Statistically Significant Favorable Effect*

- p value = probability that the relationship between practice/outcome is caused by random factors
- p value of .05 or less is significant: at least a 95% chance that the practice–outcome relationship is not random

Table. Estimated Coefficients from Regressions Predicting Grade 3 ELA Achievement and Reading

	3 rd Grade ELA achievement	3 rd Grade Reading diagnostic
With Reading 180		
English learner	.91*	.71**
Poverty status	.78	.90***
Original Curriculum		
English learner	.83*	.61**
Poverty status	.71	.82***

* $p < .05$. ** $p < .01$. *** $p < .001$.

Asterisks denote p value of .05 (95% probability)

Magnitude of effect is not relevant, just that it is positive

No Statistically Significant, Unfavorable Effects From Tier 1 or Tier 2 Studies

- No other Tier 1 or Tier 2 studies for the intervention/outcome may have statistically significant, **unfavorable** effects on the outcome of interest.
- There are shortcuts for determining this in What Works Clearinghouse (WWC).



Study Sample

To qualify for Tier 1 or Tier 2:

- Must be 350 study subjects
- Must have favorable impacts in at least two schools
- The study's sample must overlap with your own school's population and/or setting





Part 2: Using Online Resources to Identify Evidence-Based Practices

Evidence Clearinghouses

- [What Works Clearinghouse](#) (Find What Works and Practice Guides)
- [Evidence for Every Student Succeeds Act](#)
- [Social Programs That Work](#)
- [Attendance Works](#) (chronic absenteeism)
- [National Mentoring Resource Center](#) (chronic absenteeism)
- [Blueprints for Healthy Youth Development](#)
- [Campbell Corporation](#)
- [Crime Solutions](#)
- [ArtsEdSearch](#)
- [RAND Social and Emotional Evidence Review](#)

(see the [Guide to Evidence-based Clearinghouses](#) for more information)

Alignment Between Clearinghouses and Evidence Tiers

- **Just because a practice is reviewed by a clearinghouse does not mean the practice meets federal requirements.**
- Currently, none of the clearinghouses' information aligns precisely with the federal tier requirements, so there is a need to really understand the tiers.
- Some analysis is required when you use the clearinghouse to determine which tiers are met.

What Works Clearinghouse (WWC)

Two resources include shortcuts for identifying studies that meet Tiers 1–3.

Find What Works based on the evidence

FIND RESEARCH WITH STUDENTS LIKE YOURS

How to Use FWW Print

42 Results filtered by:

Path to Graduation x

Evidence of effectiveness	Intervention	Grades examined	Compare
	Dual Enrollment Programs	9-12	<input type="checkbox"/>
	Accelerated Middle Schools	6-8	<input type="checkbox"/>
	Check & Connect	9-12	<input type="checkbox"/>
	ACT/SAT Test Preparation and Coaching Programs	10-12	<input type="checkbox"/>
	Green Dot Public Schools	9-12	<input type="checkbox"/>
	Summer Counseling	12-PS	<input type="checkbox"/>
	Financial Incentives for Teen Parents to Stay In School	11-12	<input type="checkbox"/>
	Career Academies	9-12	<input type="checkbox"/>
	Achievement for Latinos through Academic Success (ALAS)	7-9	<input type="checkbox"/>
	First year experience courses	PS	<input type="checkbox"/>
	High School Redirection	9-12	<input type="checkbox"/>
	Talent Search	11-12	<input type="checkbox"/>

Filter by topic

- Literacy
- Mathematics
- Science
- Behavior
- Children and Youth with Disabilities
- English Learners
- Teacher Excellence
- Charter Schools
- Early Childhood (Pre-K)
- Kindergarten to 12th Grade
- Path to Graduation

Find What Works Database

Preventing Dropout in Secondary Schools Practice Guide Summary

Educators' Practice Guide Summary • WHAT WORKS CLEARINGHOUSE™

The four evidence-based recommendations in this WWC practice guide can support educators and administrators in preventing dropout in secondary schools.

Recommendations in this practice guide:

1. Monitor the progress of all students, and proactively intervene when students show early signs of attendance, behavior, or academic problems.
2. Provide intensive, individualized support to students who have fallen off track and face significant challenges to success.
3. Engage students by offering curricula and programs that connect schoolwork with college and career success and that improve students' capacity to manage challenges in and out of school.
4. For schools with many at-risk students, create small, personalized communities to facilitate monitoring and support.

Introduction

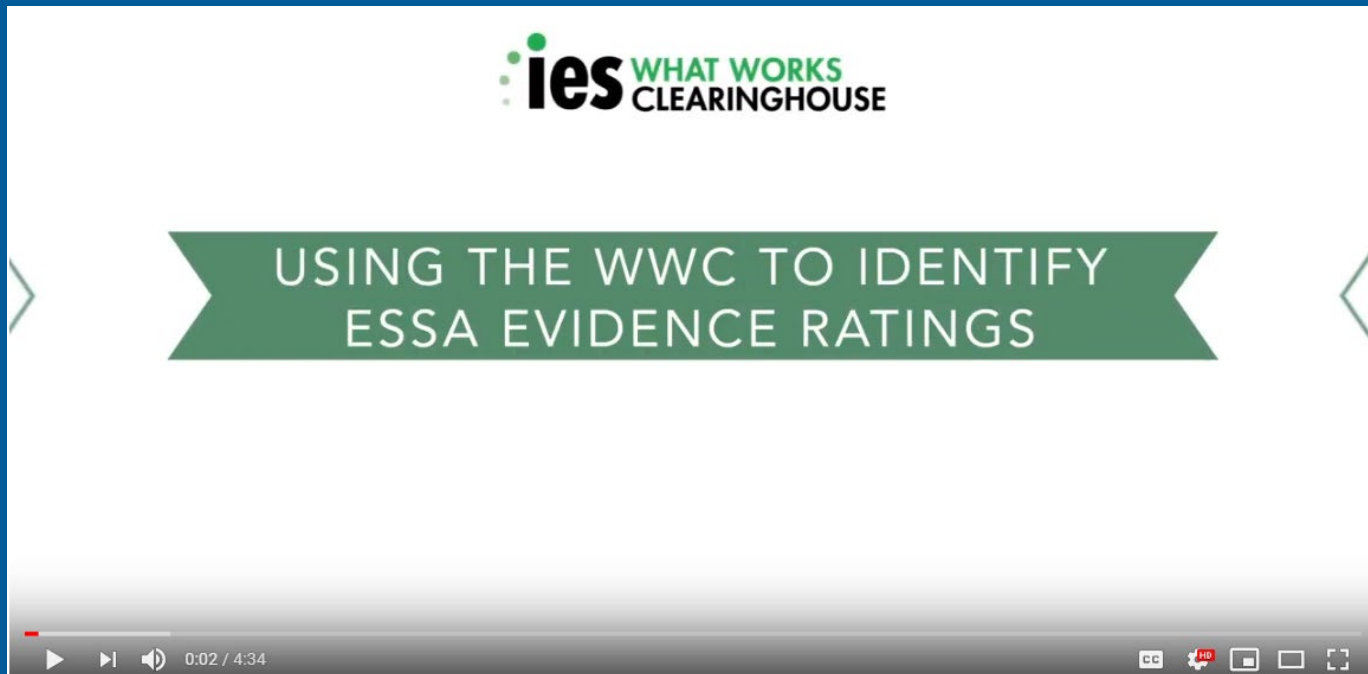
Students who do not complete high school face economic and social challenges throughout their lifetimes. They are more likely to be unemployed,¹ earn lower wages,² have poor health, engage in criminal activity, and require public assistance.³ The *Preventing Dropout in Secondary Schools* practice guide from the What Works Clearinghouse (WWC) aims to address these challenges. Developed by a panel of practitioners and researchers, the guide offers school and district administrators four evidence-based recommendations for helping students stay in school, progress through school, and graduate high school.

This summary introduces the recommendations and supporting evidence described in the full practice guide. Recommendations 1, 2, and 3 complement one another and are most effective when implemented simultaneously in all types of schools, while Recommendation 4 should be implemented primarily in schools with high dropout rates to facilitate implementation of the other three recommendations. For a full description of the recommendations and more practical tips, **download your free copy of the guide.**

ies NATIONAL CENTER ON EDUCATION EVALUATION AND REGIONAL ASSISTANCE
INSTITUTE OF EDUCATION SCIENCES

Educator Practice Guides

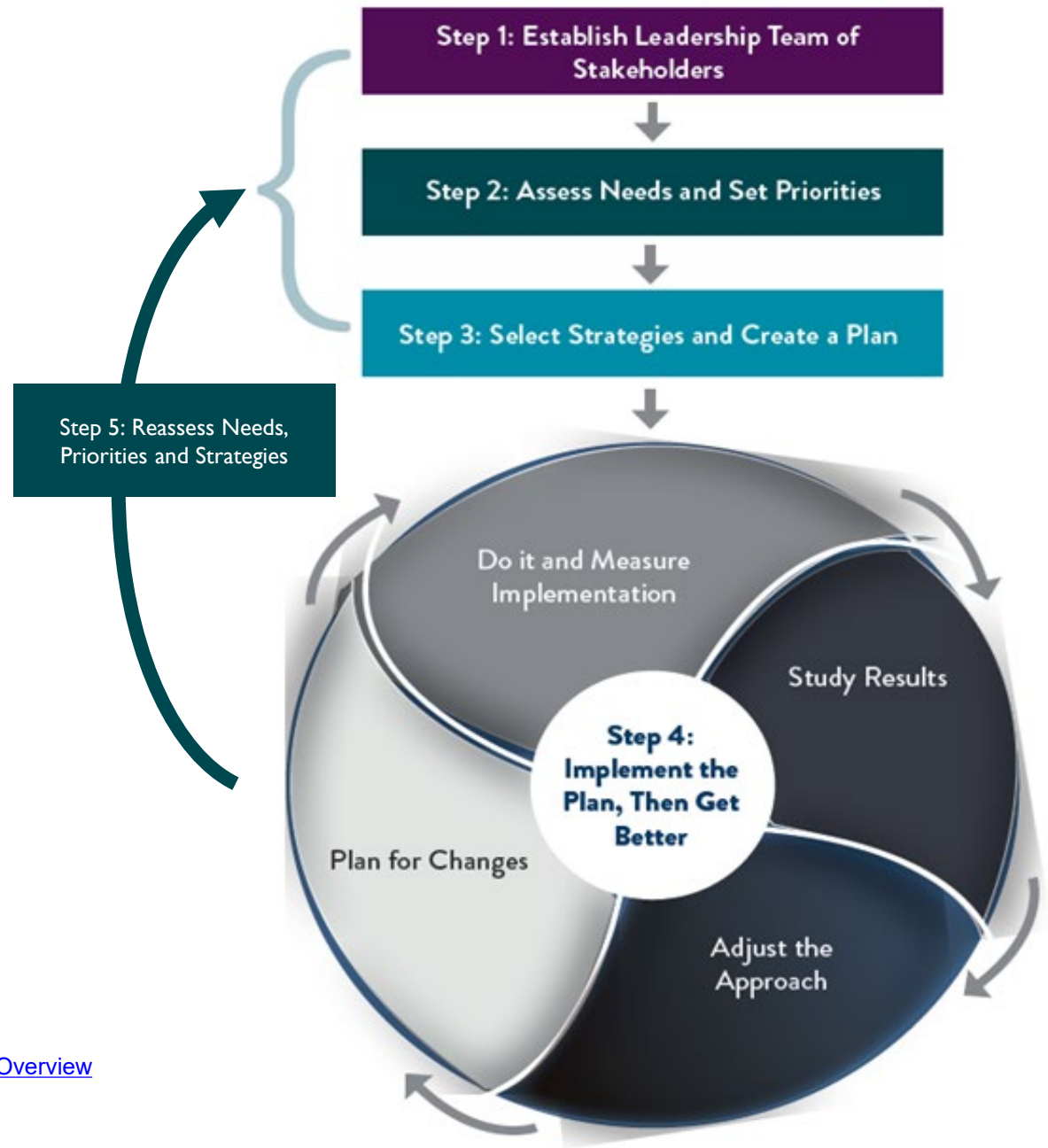
Short Video: Using “Find What Works” to Identify Evidence Based Practices



<https://www.youtube.com/watch?v=hu4XnpyiKxw&feature=youtu.be>

Part 3:
Integrating Evidence-Based Practices
Across the Continuous Improvement Cycle

PreK–12 Continuous Improvement Process



From [Continuous Improvement Framework Overview](#) (MDE)

Step 1:

Establish Leadership Team of Stakeholders

Pitfall:

No leadership team member has expertise in evidence-based practices.

Solution:

Assign someone with expertise in evidence-based practices to the leadership team and build capacity through key resources:

- For minimum expertise: [MDE / Midwest Comp Center Resource Page](#)
- For advanced expertise (recommended): [What Works Clearinghouse Certification](#)

Step 2: Assess Needs and Set Priorities

Pitfall:

Not aligning needs assessment results with research evidence

Solution:

Find research that addresses the outcomes and student groups that are identified in the needs assessment.

Research Practice

Drop-out prevention
program



Needs assessment data point



Graduation rate for
English learners



Outcome identified in the
research

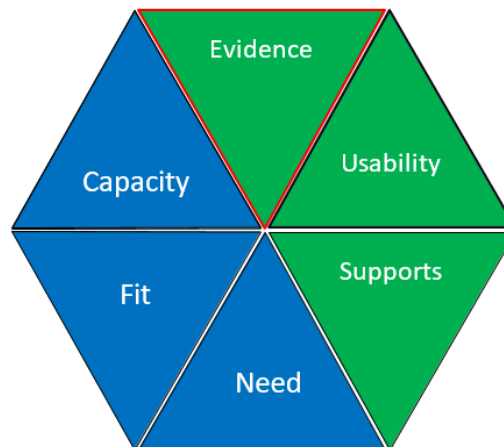
Step 3: Select Strategies and Create a Plan

Pitfall 1:

Evidence-based practice selection process that relies too much or too little on the evidence base to select interventions

Solution:

Work with the Hexagon Tool to select practices by considering all factors, not just evidence base.



Step 3:

Select Strategies and Create a Plan (continued)

Pitfall 2:

Not having documented evidence to back up this claim: *“What we’re already doing is evidence-based.”*

Solutions:

- Identify supporting research for the same practice and outcome as your current practice and require that the evidence is *documented* by someone at the district/school.
- Identify the *critical features* of the current practice and make sure they match the critical features of the identified research.

Step 4:

Implement the Plan, Then Get Better

Pitfall:

Evaluating the impact of the practice without ensuring it is implemented with fidelity

Solutions:

- Establish formal feedback channels to gather implementation feedback at 30, 60, and 90 days across relevant stakeholders—focus on what successful implementation “looks like.”
- Evaluate impact on student outcomes after first establishing a satisfactory level of implementation fidelity.

Step 5: Reassess Needs, Priorities, and Strategies

Pitfall:

Not sharing, gathering information between schools and districts regarding which practices work

Solutions:

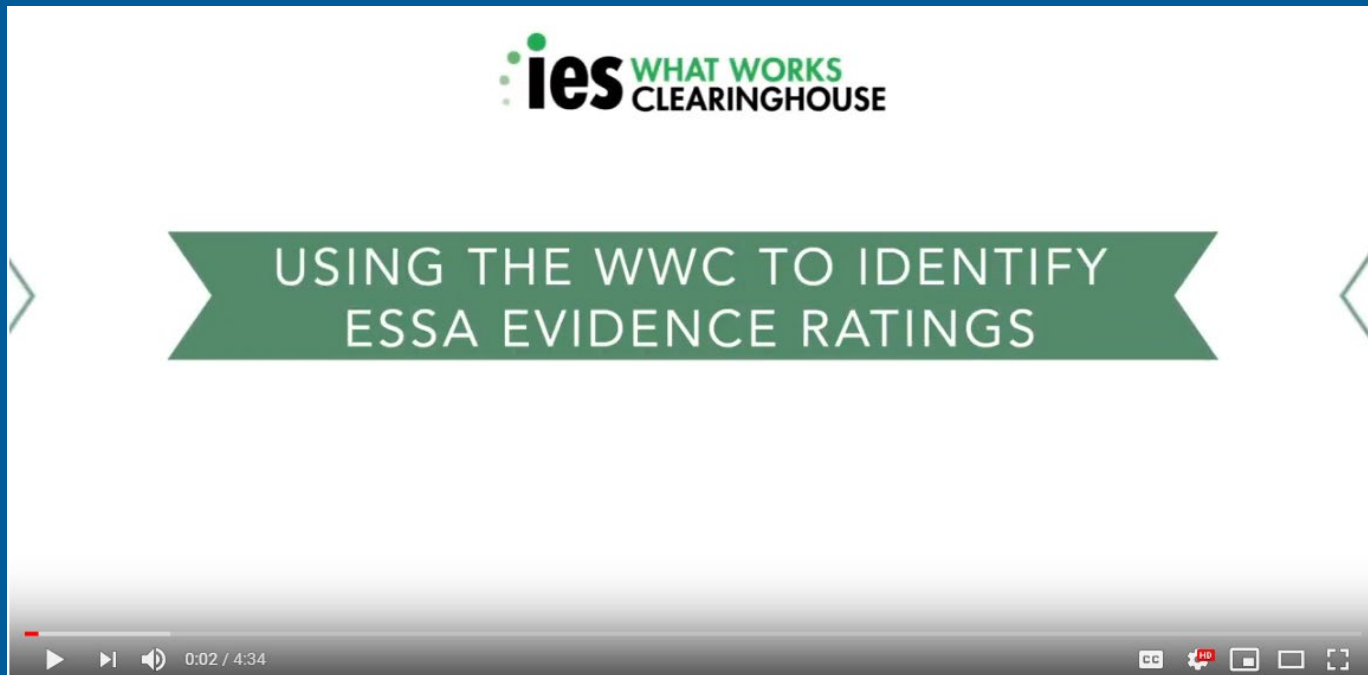
- Document, in an accessible central location, which practices, when implemented with fidelity, are improving student outcomes, and at which schools.
- Identify the critical features of the practice for its impact.

Final Reflections

Turn and talk with a partner, then let's share:

- **Reflecting on today's session, what are two pitfalls or issues you will go back and discuss with your team? What do you think your district's approach to these issues should be?**
- **Write down any additional challenges you are facing in this area or additional supports you might need from MDE and attach them to the chart paper on your way out.**

Short Video: Establishing a District Evidence Base and Using Practice Guides



<https://ies.ed.gov/ncee/wwc/multimedia/50>

Feedback Survey

Before leaving, please complete the hard copy feedback survey for **“Evidence-Based Practices Training”** or view this code through your phone’s camera to complete online:



Contact Us

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Twitter: @MidwestCompC

References

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- Metz, A., & Louison, L. (2018). *The Hexagon Tool: Exploring context*. Chapel Hill, NC: National Implementation Research Network, Frank Porter Graham Child Development Institute, University of North Carolina at Chapel Hill. Based on Kiser, Zabel, Zachik, & Smith (2007) and Blase, Kiser & Van Dyke (2013).

NOTE

The slides that follow are for reference only.

ESSA Evidence Provisions

ESSA Program	Evidence Requirement(s)
Title I, Section 1003: School Improvement	Minimum of one intervention must meet <u>Tiers 1, 2, or 3</u> in CSI, TSI, and ATSI schools
Title I, Part A: Schoolwide/Targeted Assistance	External providers must have expertise in using (Tiers 1, 2, 3, or 4)
Title II, Part A: Effective Instruction	Some requirements for Tiers 1, 2, 3, or 4, where evidence is reasonably available (e.g., professional development, induction, and mentoring)
Title IV, Part A: Student Support Grant	Some requirements for Tiers 1, 2, 3, or 4, where evidence is reasonably available
Title IV, Part B: 21st Century Community Learning Centers	Use Tiers 1, 2, 3, or 4 evidence, when deemed appropriate
Title IV, Part D: Magnet School Assistance	Competitive preference is given for proposals with evidence-based activities (Tiers 1, 2, 3, or 4)
Title IV, Part F: Education Innovation	Proposed innovations must meet Tiers 1, 2, 3 or 4
Title IV, Part F: National Community Support	<ul style="list-style-type: none"> • Promise Neighborhoods: Competitive preference for <u>Tiers 1, 2, or 3</u> • Full-Service Community Schools: Competitive preference for <u>Tiers 1, 2, or 3</u>

(Source: Elementary and Secondary Education Act, 2015)

Studies With Highest Significance Are Nearer to the Top of the Results

FIND RESEARCH WITH STUDENTS LIKE YOURS ▶

223 Results filtered by:

Literacy x

How to Use FWW Print

Filter by topic

- Literacy
- Mathematics
- Science
- Behavior
- Children and Youth

Evidence of effectiveness ⓘ	Intervention ⓘ	Grades examined ⓘ	Compare ⓘ
	Literacy Express	PK	<input type="checkbox"/>
	Phonological Awareness Training	PK	<input type="checkbox"/>
	Reading Recovery®	1	<input type="checkbox"/>
	READ 180®	4-10	<input type="checkbox"/>
	Sound Partners	K-1	<input type="checkbox"/>

Source: <https://ies.ed.gov/ncee/wwc/FWW/Results?filters=,Literacy>

Review the Effectiveness Rating by Outcome

Determine if:

- statistically significant favorable effect and
- no unfavorable effects from other experimental or quasi-experimental (Tier 1 or Tier 2) on the outcome.

Beginning Reading

September 2017

EVIDENCE SNAPSHOT INTERVENTION REPORT (863 KB) REVIEW PROTOCOL

Outcome domain ⓘ	Effectiveness rating ⓘ	Studies meeting standards ⓘ	Grades examined ⓘ	Students ⓘ	Improvement index ⓘ
Alphabetics	0	<u>1 study meets standards</u>	K-2	422	--
Reading achievement	++	<u>2 studies meet standards</u>	K-2	747	11
Reading fluency	+	<u>1 study meets standards</u>	K-2	281	11

Source: <https://ies.ed.gov/ncee/wwc/Intervention/1287>

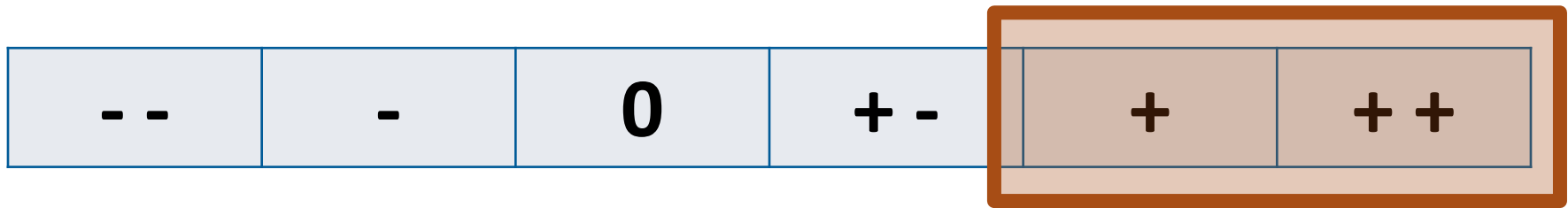
See Effectiveness Rating at Outcome Level

3 4

Determine if:

- *statistically significant favorable effect and*
- *no significant unfavorable effect from other experimental or quasi-experimental study (Tier 1 or Tier 2).*

Six possible effectiveness ratings:



+ Potentially positive
++ Positive

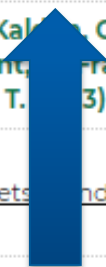


At least meets Tier 3

Select a specific study to determine:

- *design rigor*
- *attrition or baseline equivalence*

Beginning Reading					
September 2017					
		EVIDENCE SNAPSHOT	INTERVENTION REPORT (863 KB)	REVIEW PROTOCOL	
Outcome domain	Effectiveness rating	Studies meeting standards	Grades examined	Students	Improvement index
Alphabetics		<u>1 study meets standards</u>	K-2	422	--
Reading achievement		<u>2 studies meet standards</u>	K-2	747	
		Ransford-Kaldon, C., Flynt, E. S., Ross, C. L., Franceschini, L., Zoblotsky, T., Huang, Y., & Gallagher, B. (2010)	K-2	427	
		Ransford-Kaldon, C., Ross, C., Lee, C., Sutton Flynt, E., Franceschini, L., & Zoblotsky, T. (2013)	K-2	320	
Reading fluency		<u>1 study meets standards</u>	K-2	281	




What does “meets WWC standards without reservations” mean?



- *Design rigor*: well-designed, well-implemented experimental study
- *Attrition* is low.
- *Note*: Statistical significance badge is not at the outcome level.

Review Details | Findings | Sample Characteristics | Study Details

Reviewed: September 2017

For:  **Leveled Literacy Intervention Intervention Report - Beginning Reading**

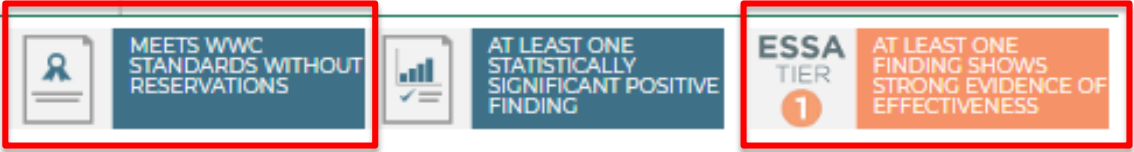
Using:

-  **Beginning Reading Review Protocol 3.0**
-  **Review Standards 3.0**

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. Please see the **WWC summary of evidence for Leveled Literacy Intervention.**



The image shows three summary cards in a row, each with a red border. The first card is blue and contains a person icon and the text 'MEETS WWC STANDARDS WITHOUT RESERVATIONS'. The second card is blue and contains a bar chart icon and the text 'AT LEAST ONE STATISTICALLY SIGNIFICANT POSITIVE FINDING'. The third card is orange and contains the text 'ESSA TIER 1' and 'AT LEAST ONE FINDING SHOWS STRONG EVIDENCE OF EFFECTIVENESS'.

What does “meets WWC standards with reservations” mean?

Review Details | Findings | Sample Characteristics | Study Details | Additional Sources

Reviewed: January 2018

For:
Knowledge is Power Program (KIPP) Intervention Report - Charter Schools

Using:
Charter Schools Review Protocol 3.0
Review Standards 3.0

Rating:
Meets WWC standards with reservations because it uses a quasi-experimental design in which the analytic intervention and comparison groups satisfy the baseline equivalence requirement.

This review may not reflect the full body of research evidence for this intervention. Please see the **WWC summary of evidence for Knowledge is Power Program (KIPP).**

The screenshot displays a navigation bar with five tabs: 'Review Details' (highlighted in green), 'Findings', 'Sample Characteristics', 'Study Details', and 'Additional Sources'. Below the tabs, three key findings are presented in blue boxes with icons and text, each enclosed in a red rectangular highlight:

- MEETS WWC STANDARDS WITH RESERVATIONS**: Accompanied by a person icon.
- AT LEAST ONE STATISTICALLY SIGNIFICANT POSITIVE FINDING**: Accompanied by a bar chart icon.
- ESSA TIER 2 AT LEAST ONE FINDING SHOWS MODERATE EVIDENCE OF EFFECTIVENESS**: Accompanied by a '2' in a circle icon.

Source: <https://ies.ed.gov/ncee/wwc/Study/85518>

What does “meets WWC standards with reservations” mean? (continued)

Review Details **Findings** Sample Characteristics Study Details Additional Sources

Science achievement outcomes—Statistically significant positive effects found **i**

Outcome measure i	Comparison i	Period i	Sample i	Intervention mean i	Comparison mean i	Significant? i	Improvement index i	ESSA rating i
Statewide science assessments (z-score)	Knowledge is Power Program (KIPP) vs. Business as usual	2 Years	High school: matched-student sample (new entrants); 1,299 students	0.11	-0.22	Yes		

+ More Outcomes

Social studies achievement outcomes—Indeterminate effects found **i**

Outcome measure i	Comparison i	Period i	Sample i	Intervention mean i	Comparison mean i	Significant? i	Improvement index i	ESSA rating i
Statewide social studies assessments (z-score)	Knowledge is Power Program (KIPP) vs. Business as usual	2 Years	High school: matched-student sample (new entrants); 601 students	-0.13	-0.15	No	--	