Evidence-Based Improvement Strategies

WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION
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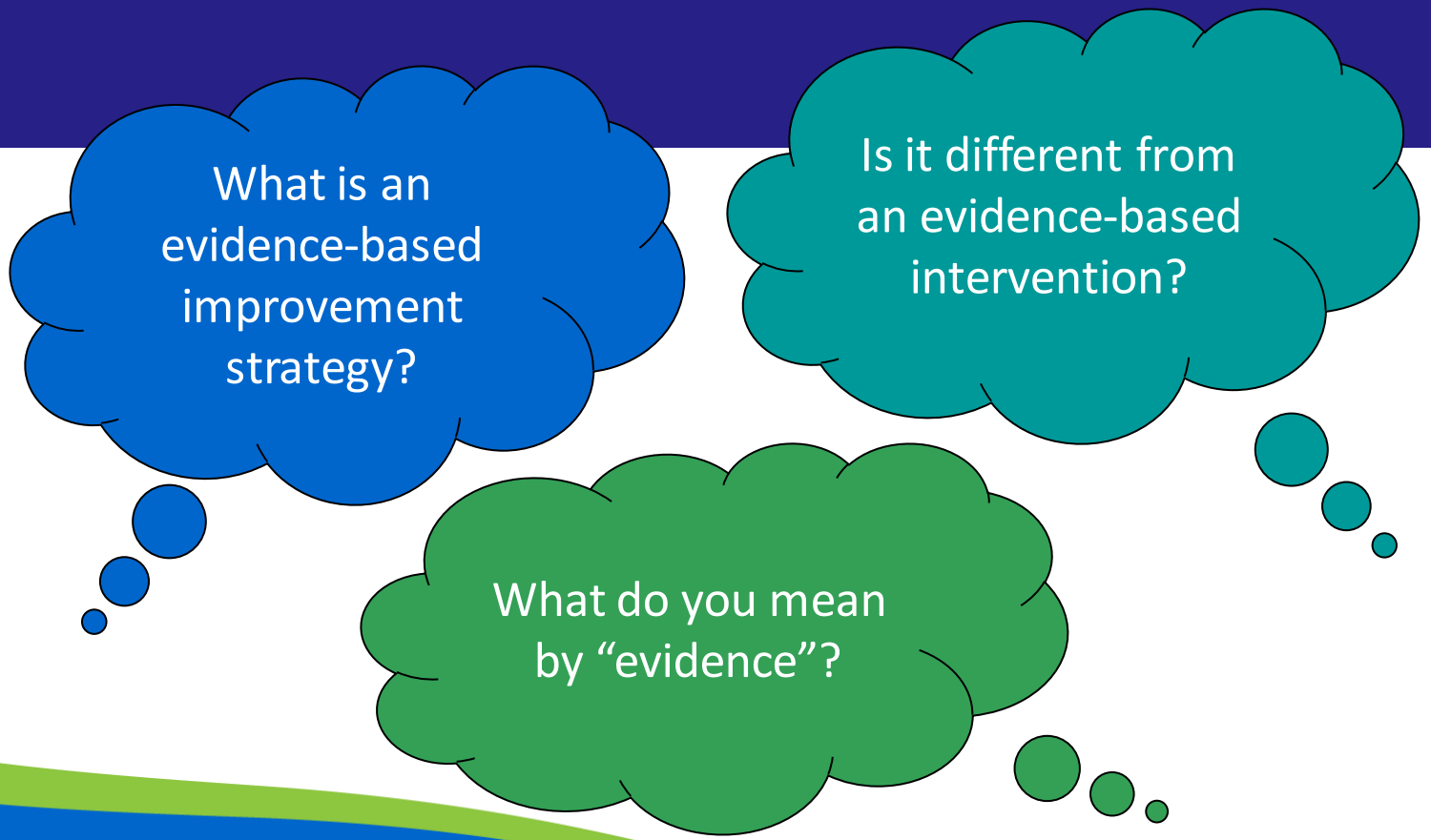

What is an evidence-based improvement strategy?
Is it different from an evidence-based intervention?
What do you mean by “evidence”?

Understanding the Basics

Understanding the basics about evidence-based improvement strategies can help anyone be more strategic when sifting through improvement options. This presentation gives you simple explanations and perspectives you can apply right away.

For schools and districts identified under ESSA, this information can help you leverage ESSA requirements to strengthen your improvement efforts and get better results.

ESSA requirements related to evidence aren't as restrictive as you might think. They don't ask you to use any particular program or practice–they just give you some guidance to help you find the best solutions for your situation.

What makes a good strategy?

To invest in the success of your improvement efforts, it's worth spending time making sure you pick the right thing to implement. So what should you look for?

A good improvement strategy has three basic characteristics:

1. It's backed by evidence.
2. It targets your real needs.
3. It's teachable, learnable and doable in your real world.

This presentation focuses on number 1.

What's "evidence-based"?

"Evidence-based improvement strategies" are strategies, practices, or programs (referred to more broadly in ESSA as "interventions") that have solid evidence to show that they produce results and improve outcomes.

They've been tested, and they're based on knowledge gained through rigorous research.

That means they are more likely to work for you.

Research Basics

You don't need to be a research expert to understand ESSA's tiers of evidence, but it's useful to have a bit of background information about the primary types of research that are used to test educational practices, strategies, and programs:

- Randomized control experimental studies
- Quasi-experimental studies
- Correlational studies

As we go through a basic description of each, keep in mind that ***the strongest evidence of effectiveness comes from research that enables us to make clear cause-and-effect connections between an improvement strategy and a positive outcome***.

Research Basics:
Randomized Control Experimental Study

Purpose: To see the effects of an intervention, isolated from other factors.

Structure: There are two groups of participants: a "treatment" group that experiences the program, practice or strategy, and a "control" group that does not. Participants are randomly assigned to the groups to help eliminate the influence of other factors besides the treatment.

What it tells you about causality: When outcomes of the two groups are compared, you can clearly see the effects of a particular treatment.

Research Basics:
Randomized Control Experimental Study

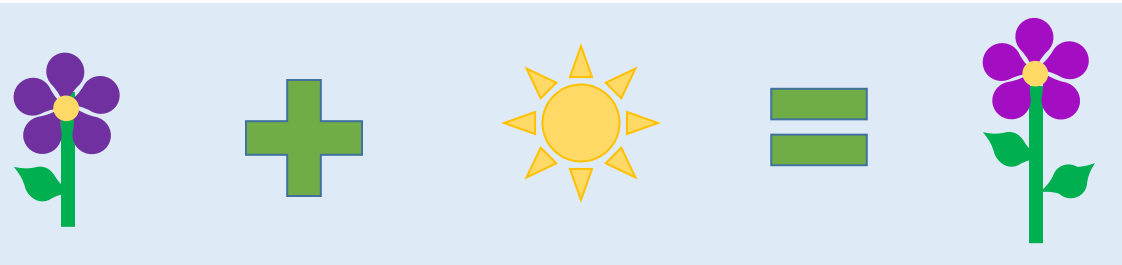
1. Start with similar groups

2. Try the practice on only one of them

3. Compare outcomes

Control group

Treatment group



Causality can be seen clearly.

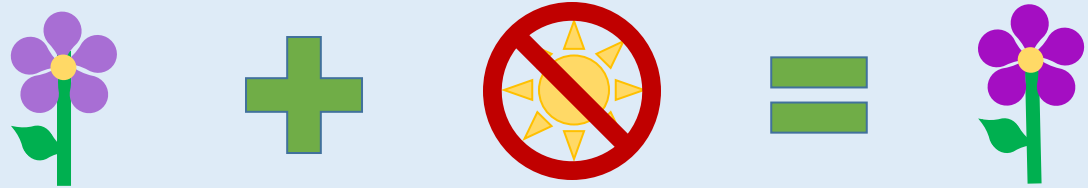
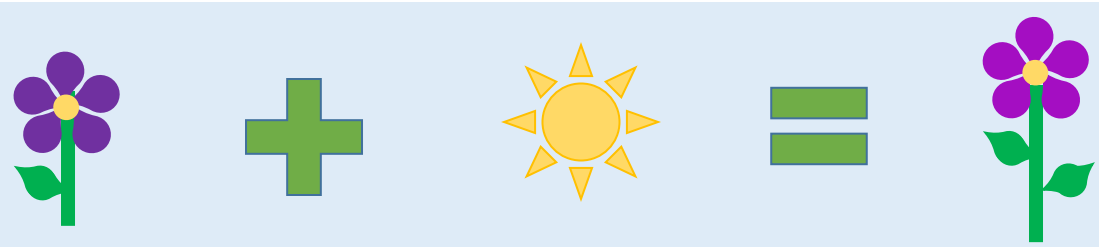
Research Basics:
Quasi-Experimental Study

Purpose: To see the effects of an intervention, isolated from (most) other factors.

Structure: A quasi-experimental study is almost the same as a random control experimental study, but individuals are not randomly assigned to the treatment and control groups.

What it tells you about causality: You can see cause-and-effect relationships, but not as clearly as with a randomized control study, because other factors may be involved.

Research Basics:
Quasi-Experimental Study

	1. Start with (sort of) similar groups	2. Try the practice on only one of them	3. Compare outcomes
Control group			
Treatment group			

Causality is somewhat clear.

Research Basics:
Correlational Study

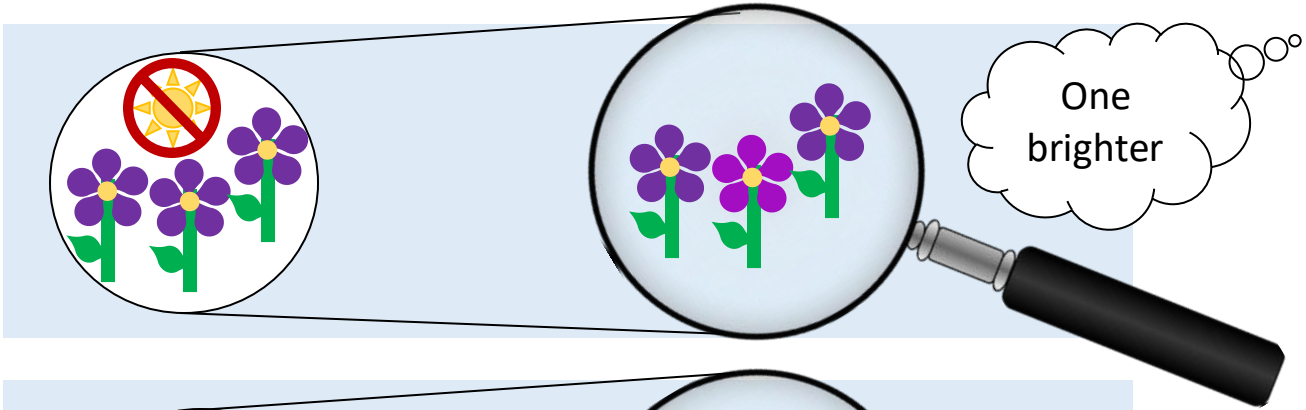
Purpose: To see if a strong relationship exists between a treatment and an outcome.

Structure: A correlational study uses a non-experimental method to determine if a relationship exists between two things. An underlying question of a correlational study might be, "How likely am I to see this given outcome when this strategy is used?"

What it tells you about causality: This type of research may show a connection between a treatment and an outcome, but it can't tell you whether the one is directly causing the other.

Research Basics:
Correlational Study

Group 1



Group 2

There are valuable clues about causality.

Research Basics:
Other Indicators of Quality and Relevance

You can begin to see that some types of studies provide a better indication than others about whether a strategy is likely to work. They provide stronger evidence.

Several other factors can make a study's results more trustworthy and relevant:

- **The study is large, with multiple sites**
- **The study is well-designed and well-conducted**
- **The population and setting are similar to your situation**
- **The study has positive results with statistical significance**
- **Other studies of the same quality don't contradict its findings**

Indicators of Quality and Relevance
Large, Multi-Site

Large and multi-site studies yield more data, which means more reliable conclusions.

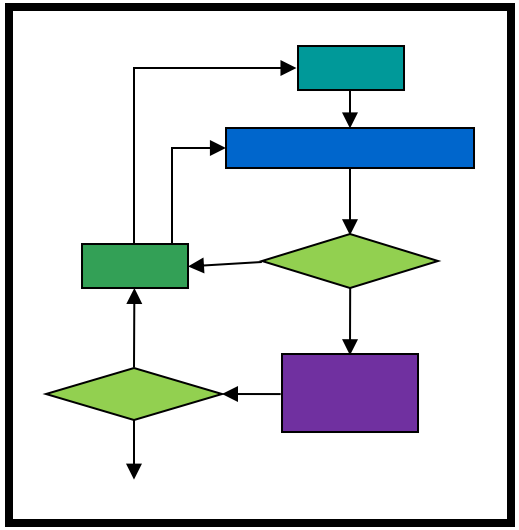
For ESSA purposes, "large, multi-site" means there are at least 350 total participants and the study was conducted at two or more different sites, such as schools or districts.

(Correlational studies are conducted differently, so this isn't a consideration.)

Indicators of Quality and Relevance
Well-Designed, Well-Conducted

A study that has been designed and conducted according to rigorous standards provides you with better information about an improvement strategy.

If the research isn't high quality, a strategy may seem more effective than it really is.



Indicators of Quality and Relevance
Setting and Population Similar to Yours

Studies conducted with a student population (grade level or student group) and school setting (urban, suburban or rural) that overlaps yours provide more solid evidence that the strategy will work for your students and setting.

Indicators of Quality and Relevance
Statistically Significant Results

Statistically significant results have passed rigorous mathematical tests, which is another way to tell the data is solid and the positive results aren't just a matter of chance.

Indicators of Quality and Relevance
Lack of Contradictory Evidence

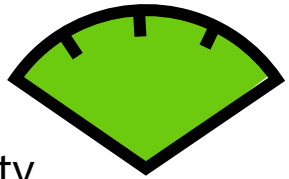
Sometimes the research findings about an intervention are not consistent–one study might indicate effectiveness, and another might not.

If the strongest studies indicate effectiveness, but studies with less rigorous methods find something else, that's not so problematic, but if the most rigorous studies contradict each other, that means the evidence of effectiveness isn't quite good enough.

ESSA Tiers of Evidence
Strong and Moderate Evidence

If you understand the principles we just covered, the four tiers of evidence are pretty simple.

Tier 1: Strong Evidence
A practice, strategy or program is considered to have strong evidence of its effectiveness if it is backed by a **randomized control experimental study** that has all of the additional indicators of quality and relevance.



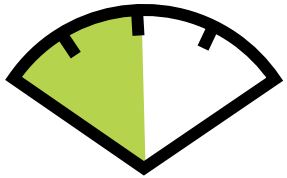
Tier 2: Moderate Evidence
A practice, strategy, or program is considered to have moderate evidence of its effectiveness if it is backed by a **quasi-experimental study** that has all of the additional indicators of quality and relevance.

ESSA Tiers of Evidence

Promising Evidence and Demonstrated Rationale

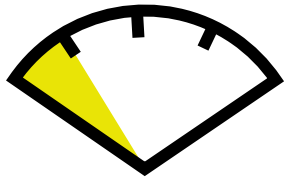
Tier 3: Promising Evidence

A practice, strategy, or program is considered to have promising evidence of its effectiveness if it is backed by a correlational study that has statistical controls for selection bias and also has the additional indicators of quality and relevance that apply to this type of study.



Tier 4: Demonstrates a Rationale

A practice, strategy, or program is considered to demonstrate a rationale for its effectiveness if it has well-defined logic behind it that is supported by research, and a reputable organization or agency is undertaking research to test it.



ESSA Tiers of Evidence

Which tier?

If your school has been identified for Comprehensive Support and Improvement (CSI) under ESSA's Title I, you must select a strategy backed by Tier 1, Tier 2, or Tier 3 evidence. We recommend that schools identified for Targeted Support and Improvement (TSI) do the same. Tier 4 evidence meets requirements for other ESSA titles.

No matter which requirements you need to meet, keep in mind that the better the research supporting an improvement strategy is, and the more closely it matches your own situation, the more likely it is to work for you. And it only makes sense to select something that's more likely to work.

Next Steps

So how do you find improvement strategies that meet the right evidence requirements?

Luckily, there are a number of organizations that review programs and practices based on the evidence behind them. When you're ready, a comprehensive list is available in WISELearn.

But wait!

Next Steps

At the beginning of this presentation, we said that a good improvement strategy has three basic characteristics:

1. It's backed by evidence.
2. It targets your real needs.
3. It's teachable, learnable and doable in your real world.

What about numbers 2 and 3?

That's the focus of the next module, which connects your strategy selection to the overarching continuous improvement process. It also contains links to many resources to simplify the complex process of change.