



U.S. Department of Education

Office of Safe and Healthy Students



# ***Selecting and Implementing Evidence-based Practices***

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November 19, 2015



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# Context

- SCTG awardees are expected to select and implement evidence-based practices that are within a multi-tiered behavior framework.
- Many Grantees have launched Tier I supports and are still considering Tier II and Tier III support options.



# Context

- Growing concern in education about use of practices that are **not** evidence-based
  - Boardman, Arguelles, Vaughn, Hughes, & Klinger, 2005; Burns & Ysseldyke, 2009; Cook & Odom, 2013; Jones, 2009)

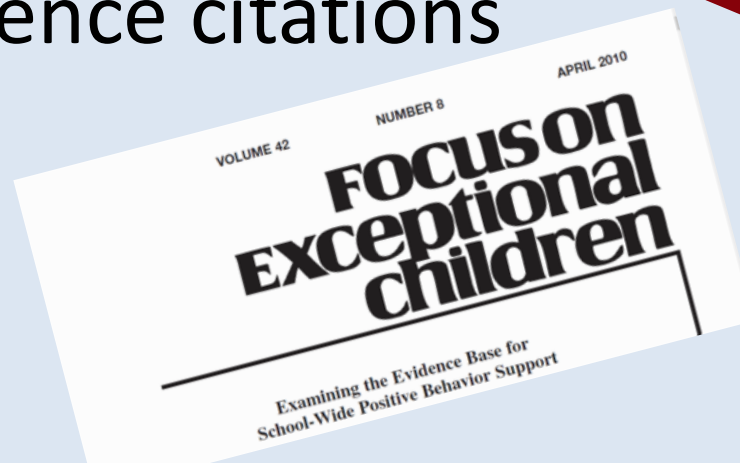


# Resources

- Oregon – Proven Practices
- NIRN Hexagon Tool



- 
- PBIS evidence citations
  - Literacy evidence citations
  - Math evidence citations



# Goals

- Define a “**practice**”
- Define criteria for determining if a practice is “**evidence-based**”
- Define the larger protocols for **selecting practices**.
  - One state example (Oregon’s Proven Practices SOP)
  - The Hexagon Tool for use by Districts
- Provide **examples** of selecting practices for behavior support and academic support.

# Evidence-based Practice in Education

- ...the modern era of evidence-based practice in medicine emerged in the early 1970s and 1980s (Bennett et al., 1987) and came into fruition in Great Britain in the early 1990s (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996).
- General and special education have followed suit in adopting scientific evidence as the appropriate basis for selecting teaching practices (Carnine, 1999; Davies, 1999; Oakley, 2002; IDEA 2006)

# Defining a “Practice”

- An educational practice is **a procedure** (or set of procedures) designed for use in a specific **context** (or set of contexts) by a specific set of **users** to achieve defined **outcomes** for a defined **population** or populations.





# Six Defining Features of a Practice

- **Procedures** are operationally defined
  - The procedures are observable
- The **settings** (or contexts) in which the practice is expected to be effective are defined
- The **target population** (or populations) for whom the practice is intended to be effective is defined
- The **qualifications of people** who may use the practice with success are defined
- The **outcomes** that may be expected from using the practice are defined
- The **conceptual theory** and basic mechanisms framing the practice are defined



# Practices of Different Sizes

- A practice may be **small in scope** (e.g., the use of positive reinforcement to increase academic engagement),
- A **modest bundle** of procedures that address a narrow outcome (e.g., Good Behavior Game to improve classroom performance), or
- A **large package** of procedures that collectively target a major social issue (e.g., Direct Instruction to improve early literacy; Social Emotional Learning to improve social competence).

# Are these “practices?”

- Whole Language Reading Instruction
- Positive reinforcement
- Inclusion
- IDEA
- Discrete trial training
- Proportion-of intervals with social engagement
- Facilitated communication
- Functional behavioral assessment
- Title I funding
- Restorative Practices

Procedures defined  
Settings  
Population  
Qualifications of users  
Outcomes  
Conceptual Theory

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Just because it is a practice  
does NOT mean it is  
“evidence-based”

Is a Practice “Evidence-based”

# What Works Clearinghouse

- Assess the quality of the research **methodology**
- Assess the **relationship** between the practice and the effect.
- Assess the magnitude of **effect**





# “Evidence-based”

*Council for Exceptional Children*

- Assess the extent to which a practice is associated with valued outcomes:
  - **Strong**: Two RCTs, or at least 5 single-case studies documenting effects across at least three research groups and a total of 20 participants.
  - **Promising**: One RCT or 1-4 Single-case Studies
  - **Emerging** : Evaluation data documenting a causal relation
  - **Insufficient**: Theory, but no formal data
  - **Contra-indicated**: Documentation of effects that are not intended.

The emerging role of **negative effects** (studies that do NOT show outcomes) and **contra-indicated effects** (studies that show detrimental outcomes).

## Samples of Definitions for “Evidence-based”

“EBP in psychology is the integration of the best available research with clinical expertise in the context of patient characteristics, culture, & preferences.”

American Psychological Association, 2006

“EBPs are practices that are supported by multiple, high-quality studies that utilize research designs from which causality can be inferred & that demonstrate meaningful effects on student outcomes”

Cook & Cook, 2013

“Treatment or service, has been studied, usually in an academic or community setting, & has been shown to be effective, in repeated studies of the same practice and conducted by several investigative teams.”

National Alliance on Mental Health, 2007

“Causal evidence that documents a relationship between an activity, treatment, or intervention and its intended outcomes, including measuring the direction & size of change, & the extent to which a change may be attributed to the activity or intervention. Causal evidence depends on the use of scientific methods to rule out, to the extent possible, alternative explanations for the documented change”

National Institute of Justice

“An approach in which current, high-quality research evidence is integrated with practitioner expertise & client preferences & values into the process of making clinical decisions.”

ASHA, [www.asha.org](http://www.asha.org)

“When programs & practices effectiveness have been demonstrated by causal evidence, generally obtained through high quality outcome evaluations.”

National Institute of Justice

“Strong evidence means that the evaluation of an intervention generates consistently positive results for the outcomes targeted under conditions that rule out competing explanations for effects achieved (e.g., population & contextual differences)”

HHS SAMHSA, 2009

“Process in which the practitioner combines well-researched interventions with clinical experience, ethics, client preferences, & culture to guide & inform the delivery of treatments & services”

Socialworkpolicy.org, 2015

# Common Criteria

- Clearly define practices
- Empirical demonstration of effect
  - Research Design
- Replication of effect
- Documentation under “typical” conditions

# Selecting A Practice:

“Evidence-based” is Important, but not the only consideration in selecting a practice

- State level decision-making
- District level decision-making



# One State's Approach



## Standard Operating Procedure: Proven Practices

March, 2013

The Oregon Department of Education (DOE) is committed to continuously improving the quality and equity of educational opportunities for children and their families. Toward this end ODE promotes efforts to identify, understand, demonstrate and disseminate evidence-based educational practices that will improve the effectiveness and efficiency of Oregon's schools. The present document describes:

- (a) The core outcomes guiding the mission of education in Oregon,
- (b) Recommended criteria for identifying educational practices for adoption

Identification of emerging, promising and proven practices is intended to assist state, district, building and classroom investment in educational improvement. When considering selection or adoption of new educational practices, consideration of the following criteria is encouraged.

### **Core Educational Goals**

All educational practices will be assessed in part by the extent to which they advance core educational goals. The Oregon Department of Education exists to enhance the (a) academic achievement, (b) social development and (c) health & safety of all children in the state. Adoption of any new practice should include consideration of how that practices will facilitate these goals.

# Oregon Department of Education

- ***Emerging Practice***
  - Sufficient Scope
  - Precisely defined procedures
  - Professional development plan
  - Continuous improvement protocol (how to assess and improve)
- ***Promising (above plus)***
  - Measure of fidelity
  - Validated through one Randomized Controlled Trial (RCT)
  - No studies documenting negative effects
- ***Proven (above plus)***
  - At least 50 schools in Oregon have adopted the practice with fidelity and impact.
  - The practice is more effective and/or efficient than current alternatives.



# Is PBIS Evidence-based

- Procedures
- Settings
- Users
- Outcomes
- Evidence documenting effect
- Conceptual Logic





# One Example:

## Experimental Research on SWPBIS

- Bradshaw, C.P., Koth, C.W., Thornton, L.A., & Leaf, P.J. (2009). Altering school climate through school-wide Positive Behavioral Interventions and Supports: Findings from a group-randomized effectiveness trial. *Prevention Science, 10*(2), 100-115
- Bradshaw, C.P., Koth, C.W., Bevans, K.B., Jalongo, N., & Leaf, P.J. (2008). The impact of school-wide Positive Behavioral Interventions and Supports (PBIS) on the organizational health of elementary schools. *School Psychology Quarterly, 23*(4), 462-473.
- Bradshaw, C. P., Mitchell, M. M., & Leaf, P. J. (2010). Examining the effects of School-Wide Positive Behavioral Interventions and Supports on student outcomes: Results from a randomized controlled effectiveness trial in elementary schools. *Journal of Positive Behavior Interventions, 12*, 133-148.
- Bradshaw, C.P., Reinke, W. M., Brown, L. D., Bevans, K.B., & Leaf, P.J. (2008). Implementation of school-wide Positive Behavioral Interventions and Supports (PBIS) in elementary schools: Observations from a randomized trial. *Education & Treatment of Children, 31*, 1-26.
- Bradshaw, C., Waasdorp, T., Leaf, P., (2012) Effects of School-wide positive behavioral interventions and supports on child behavior problems and adjustment. *Pediatrics, 130*(5) 1136-1145.
- Horner, R., Sugai, G., Smolkowski, K., Eber, L., Nakasato, J., Todd, A., & Esperanza, J., (2009). A randomized, wait-list controlled effectiveness trial assessing school-wide positive behavior support in elementary schools. *Journal of Positive Behavior Interventions, 11*, 133-145.
- Horner, R. H., Sugai, G., & Anderson, C. M. (2010). Examining the evidence base for school-wide positive behavior support. *Focus on Exceptionality, 42*(8), 1-14.
- Ross, S. W., Endrulat, N. R., & Horner, R. H. (2012). Adult outcomes of school-wide positive behavior support. *Journal of Positive Behavioral Interventions, 14*(2) 118-128.
- Waasdorp, T., Bradshaw, C., & Leaf, P., (2012) The Impact of Schoolwide Positive Behavioral Interventions and Supports on Bullying and Peer Rejection: A Randomized Controlled Effectiveness Trial. *Archives of Pediatric Adolescent Medicine, 2012;166*(2):149-156
- Bradshaw, C. P., Pas, E. T., Goldweber, A., Rosenberg, M., & Leaf, P. (2012). Integrating schoolwide Positive Behavioral Interventions and Supports with tier 2 coaching to student support teams: The PBISplus Model. *Advances in School Mental Health Promotion, 5*(3), 177-193. doi:10.1080/1754730x.2012.707429
- Freeman, J., Simonsen, B., McCoach D.B., Sugai, G., Lombardi, A., & Horner, ( submitted) Implementation Effects of School-wide Positive Behavior Interventions and Supports on Academic, Attendance, and Behavior Outcomes in High Schools.

# One Example: Experimental Research on SWPBIS

## SWPBIS Experimentally Related to:

1. Reduction in problem behavior
2. Increased academic performance
3. Increased attendance
4. Improved perception of safety
5. Reduction in bullying behaviors
6. Improved organizational efficiency
7. Reduction in staff turnover
8. Increased perception of teacher efficacy
9. Improved Social Emotional competence

Bradshaw, C.P., Koth, C.M. (2011). Altering school climate through school-wide Positive Behavioral Interventions and Supports (PBIS). *Journal of Emotional and Behavioral Disorders, 17*(2), 100-115.

Bradshaw, C.P., Koth, C.M. (2011). Altering school climate through school-wide Positive Behavioral Interventions and Supports (PBIS). *Journal of Emotional and Behavioral Disorders, 17*(2), 100-115.

Bradshaw, C. P., Mitchell, M. L., & Koth, C. M. (2011). School-wide Positive Behavioral Interventions and Supports (SWPBIS): A review of the literature. *Journal of Emotional and Behavioral Disorders, 17*(2), 100-115.

Bradshaw, C.P., Reinherz, H. W., & Koth, C. M. (2011). School-wide Positive Behavioral Interventions and Supports (SWPBIS): A review of the literature. *Journal of Emotional and Behavioral Disorders, 17*(2), 100-115.

Bradshaw, C., Waas, T., & Koth, C. M. (2011). School-wide Positive Behavioral Interventions and Supports (SWPBIS): A review of the literature. *Journal of Emotional and Behavioral Disorders, 17*(2), 100-115.

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Waas, T., Enders, J. R., & Koth, C. M. (2011). School-wide Positive Behavioral Interventions and Supports (SWPBIS): A review of the literature. *Journal of Emotional and Behavioral Disorders, 17*(2), 100-115.

Bradshaw, C. P., Pas, T., & Koth, C. M. (2011). School-wide Positive Behavioral Interventions and Supports (SWPBIS): A review of the literature. *Journal of Emotional and Behavioral Disorders, 17*(2), 100-115.

Supports with tier 2 coaching to teachers. *Journal of Emotional and Behavioral Disorders, 17*(2), 100-115.

Freeman, J., Simonsen, B., McCoach D.B., Sugai, G., Lombardi, A., & Horner, (submitted). School-wide Positive Behavioral Interventions and Supports on Academic, Attendance, and Behavior Outcomes in High Schools.

Positive Behavior Interventions and Supports on Academic, Attendance, and Behavior Outcomes in High Schools.

[View Text-only Version](#)



**PBIS** Positive Behavioral Interventions & Supports  
OSEP TECHNICAL ASSISTANCE CENTER

The Technical Assistance Center on Positive Behavioral Interventions and Supports is established by the U.S. Department of Education's Office of Special Education Programs (OSEP) to define, develop, implement, and evaluate a multi-tiered approach to Technical Assistance that improves the capacity of states, districts and schools to establish, scale-up and sustain the PBIS framework. Emphasis is given to the impact of implementing PBIS on the social, emotional and academic outcomes for students with disabilities.

SCHOOL



FAMILY



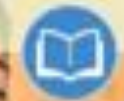
COMMUNITY



RESEARCH



TRAINING



RESEARCH



## current topics

### **PBIS Implementation Blueprint**

Please check out our new PBIS Implementation Blueprint: Part 1 & Part 2.

### **Equity and PBIS**

New practice guide 'Examples of Engaging Instruction to Increase Equity in Education' posted.

**Special Issue of Education and Treatment of Children**



### **school climate transform grants**

PBIS Materials for School Climate Transformation Grants (SCTG) awarded. Webinar videos, contact information, events, and TA reports are available.

[SCTG materials >](#)



### **presentations**

Slides from Training & Conference Presentations. Please check the left side menu for 2013 Leadership Forum and previous Leadership Forum materials.

[Presentation Materials >](#)



### **pbis blueprints**

Blueprints for implementation, professional development, and evaluation of PBIS. Please check our updated 'Implementation Blueprint' (updated on Oct 18, 2013).

[Blueprints for success >](#)



# Test, Kemp-Inman, Diegelmann, Hitt, & Bethune, 2015. **Are Online Sources for Identifying Evidence-based Practices Trustworthy? An Evaluation.** *Exceptional Children* 82(1) 58-80

27 sites rated as “Trust” or “Trust with Caution”  
20 sites rated as “Do not Trust”

## Evaluation Studies

### research

#### Primary

Measures

➤ Evaluation Studies

#### Secondary

Daily Report Card

Other Journal Articles

First Steps to Success

Social Skills Training

#### Tertiary

SWPBS & Mental Health

### SWPBS Evaluation Studies

**Evaluation and Quasi-Experimental studies** examining SWPBS that used research quality measures, but did NOT employ experimental designs document both implementation of the core feature by typical school personnel, and either improved academic performance, or reductions in office discipline referrals.

Barrett, S., Bradshaw, C., & Lewis-Palmer, T. (2008). Maryland state-wide PBIS initiative. *Journal of Positive Behavior Interventions*, 10, 105-114.

Benedict, E., Horner, R.H., & Squires, J. (2007). Assessment and Implementation of Positive Behavior Support in preschools. *Topics in Early Childhood Special Education*, 27(3), 174-192.

Biglan, A. (1995). Translating what we know about the context of antisocial behavior in to a lower prevalence of such behavior. *Journal of Applied Behavior Analysis*, 28, 479-492.

Blonigen, B., Harbaugh, W., Singell, L., Horner, R.H., Irvin, L., & Smolkowski, K. (2008). Application of economic analysis to school-wide positive behavior support programs. *Journal of Positive Behavior Interventions*.

Bohanon, H., Fenning, P., Carney, K., Minnis, M., Anderson-Harriss, S., Moroz, K., Hicks, K., Kasper, B., Culos, C., Sailor, W., & Piggott, T. (2006). School-wide application of positive behavior support in an urban high school: A case study. *Journal of Positive Behavior Interventions*, 8(3), 131-145.

Boneshefski, M., & Runge, T. (2014). Addressing disproportionate discipline practices within a school-wide positive behavioral interventions and supports framework: A practical guide for calculating and using disproportionality rates. *Journal of Positive Behavior Interventions*, 16(3) 149-158.

Burke, M., Davis, J., Hagan-Burke, S., Lee Y, Fogarty, M. (2014). Using SWPBS expectations as a screening tool to predict behavioral risk in middle school. *Journal of Positive Behavior Interventions*, 16(1) 5-17.

# Evaluating New and Existing Practices Across Your System

Using the Hexagon Tool through the Phases of Implementation

# Thank you

- <http://implementation.fpg.unc.edu/>
- The National Implementation Research Network's Active Implementation Hub

Blase, K., Kiser, L. and Van Dyke, M. (2013). *The Hexagon Tool: Exploring Context*. Chapel Hill, NC: National Implementation Research Network, FPG Child Development Institute, University of North Carolina at Chapel Hill.

# The universe of possible solutions is large and expanding



- Internet searches
- Word of mouth
- *Nationally funded websites as clearinghouses of evidence-based practices*





## Learn about the WWC with Our New Infographics



Quick references are available about the WWC, determining study ratings, reporting findings, and developing reports.

## Evidence for What Works in Education

We review the research on the different programs, products, practices, and policies in education.

Then, by focusing on the results from high-quality research, we try to answer the question "What works in education?"

Our goal is to provide educators with the information they need to make evidence-based decisions.

## Publications & Products

10,900 studies reviewed!

Get started with free products from the WWC:



**Practice guides** help educators address classroom challenges.

## Find What Works!



Based on the research evidence, find what

## WWC Fact Check: Test Your Knowledge...

"No discernible effects" means an intervention doesn't work.

☐ True

☐ False



## The Hexagon Tool: Exploring Context

Based on the work of  
Kiser, Zabel, Zachik, & Smith (2007) and  
The National Implementation Research Network (NIRN)

National Implementation Science Center  
Frank Porter Graham  
UNIVERSITY OF NORTH CAROLINA



## The Hexagon Tool: Exploring Context

Adapted with permission by  
The State Implementation & Scaling-up of Evidence-based Practices Center (SISEP)  
Based on the work of  
Kiser, Zabel, Zachik, & Smith (2007) and  
The National Implementation Research Network (NIRN)  
Frank Porter Graham Child Development Institute

**nirn**  
National  
Implementation  
Research Network

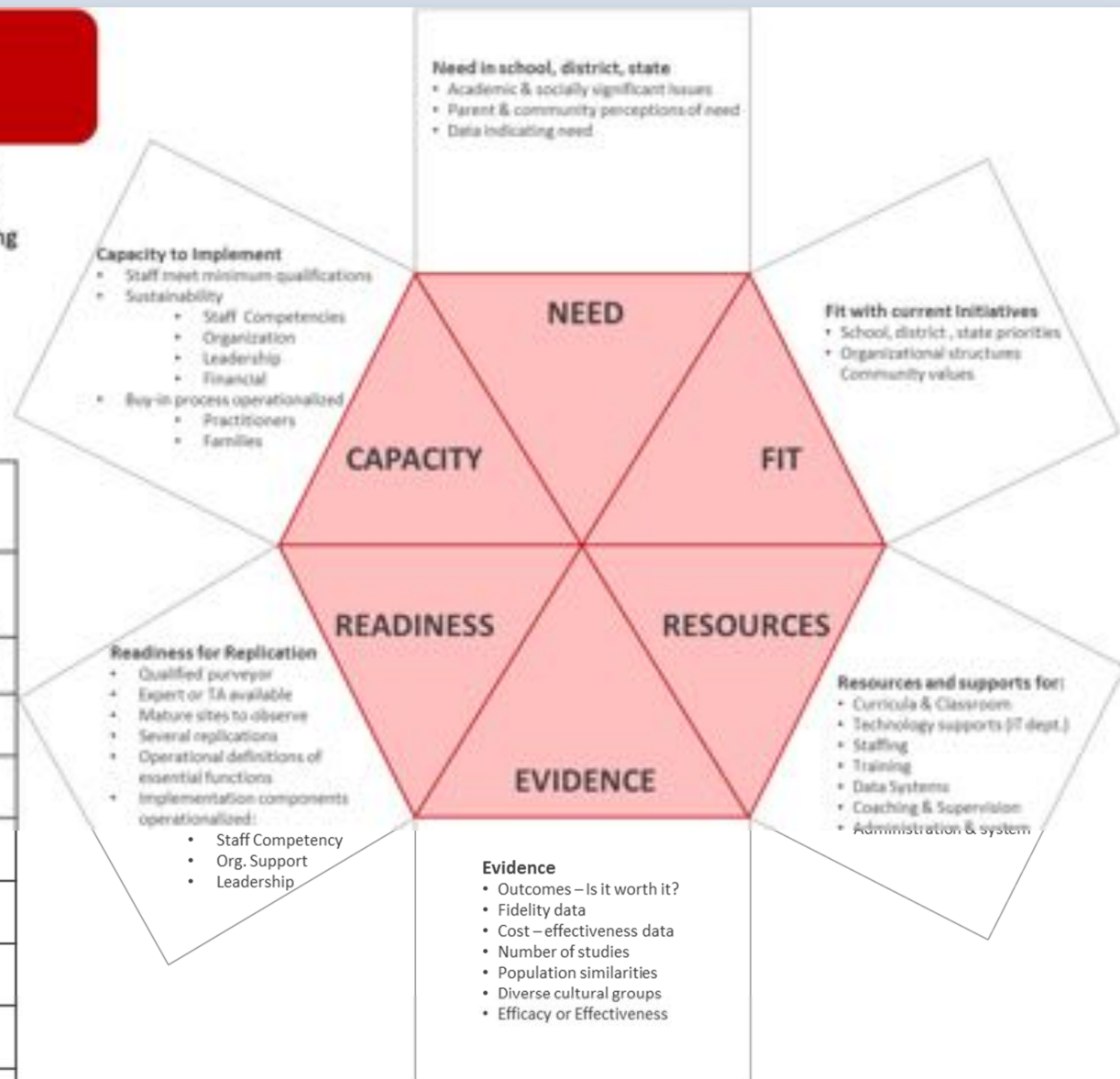
 State Implementation  
& Scaling-up  
of Evidence-based Practices

## The Hexagon Tool Exploring Context

The Hexagon Tool can be used as a planning tool to evaluate evidence-based programs and practices during the Exploration Stage of Implementation.

See the Active Implementation Hub Resource Library  
<http://implementation.fpg.unc.edu>

EBP:			
5 Point Rating Scale: High = 5; Medium = 3; Low = 1. Midpoints can be used and scored as a 2 or 4.			
	High	Med	Low
Need			
Fit			
Resource Availability			
Evidence			
Readiness for Replication			
Capacity to Implement			
<b>Total Score</b>			



# 6 Evaluation Factors

- Need
- Fit
- Resource Availability
- Evidence
- Readiness for Replication
- Capacity to implement

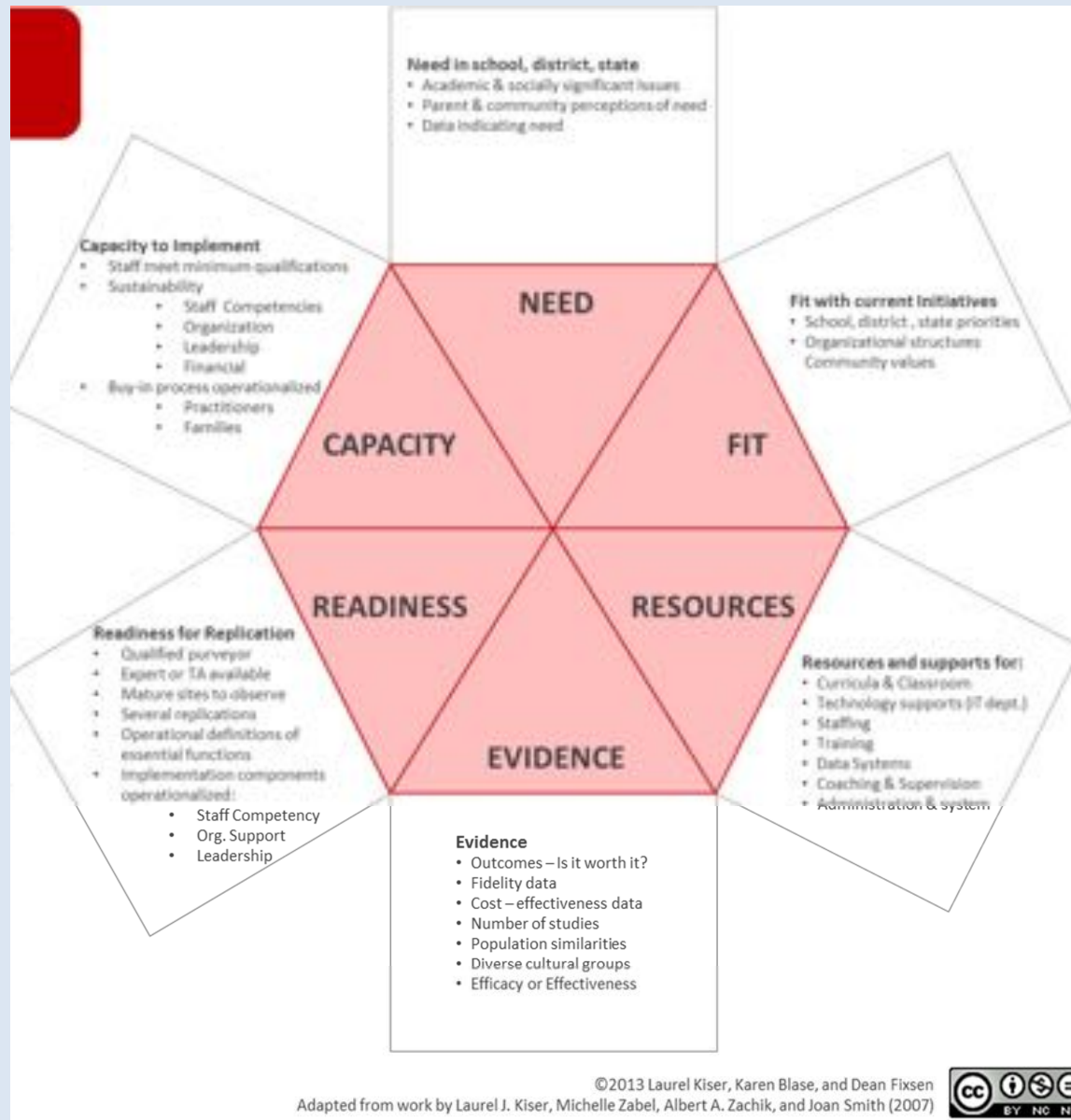
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Capacity to Implement			
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# Hexagon Tool (Kiser, Blase, Fixsen, 2013)





# Exploring Need and Fit of an EBP

## Need

- Data demonstrating that efforts would meet specific need within the district

Example: Low attendance, low student performance in specific content areas

## Fit

- Priorities
- Implementation structures
- Other initiatives
- Stakeholder values

Example: Is there already an existing program at the elementary level? Is the proposed practice in alignment with stakeholder support (i.e. board, parents)?

# Exploring Readiness and Resources

## Readiness for replication

- Capacity for external and internal training and coaching
- Model demonstrations available
- Proposed program is well defined

Example: Does someone within the district have expertise in the area? Can someone be trained?

## Resources

- Time, people, funds available
- Data systems and materials
- Administrative support

Example: Are there enough funds to purchase all the materials that define the proposed program?



# Exploring the Evidence of the Proposed Practice

## **Evidence**

- Consider source
- Proven track record to improve outcomes
- Converging evidence

Example: Which features must be implemented in order to get the desired impacts? What degree of certainty does available data offer?

# Literacy Example

Evidence-Based Practice: Literacy Core Curriculum	Score
Need (Data & Perception): “Schools are using different curricula and much of it is 10 years old.”	5
Fit (Priorities & Values): “Teachers are asking for up to date materials and are interested in supporting each other across the district.”	4
Resource Availability (Materials, Staff, Data Supports): “How much will an adoption cost beyond just materials? How will we make time for teachers to attend PD, be coached, and plan for new materials?”	2
Capacity to Implement	2
Readiness for Replication	4
Evidence	4

# Literacy Example

Evidence-Based Practice: Literacy Core Curriculum	Score
Need (Data & Perception):	5
Fit (Priorities & Values):	4
Resource Availability (Materials, Staff, Data Supports):	2
Capacity to Implement (Staff capacity, Coaching, Sustain, & Buy-In): “What’s our process to establish buy-in? How will we sustain this adoption over time?”	2
Readiness for Replication (Experts, Mature Sites, & Models): “Is there external expert support available? Can we observe schools already implementing?”	4
Evidence (Outcomes, Fidelity, & Research): “Evidence of positive outcomes for similar schools? How many studies have been published or reviewed?”	4

# Resulting Action Plan

## **Resource Availability**

- Build plan for long-term training of new staff
- Build plan for extra teacher planning time the first year of adoption
- Establish IT supports for fidelity monitoring

## **Capacity to Implement**

- Establish FTE for ongoing coaching
- Build plan for ongoing coaching
- Build plan for fidelity monitoring

# Reflect on your PBIS and school climate practices...

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What exploration steps has your district done a thorough job of completing?

- What steps could you go back and complete to strengthen buy-in and readiness for implementation of your practices?



# Online Resources

- <http://implementation.fpg.unc.edu/resources/hexagon-tool-exploring-context>
- <http://ies.ed.gov/ncee/wwc/>
- <http://www.intensiveintervention.org/>
- <http://www.rti4success.org/>
- <http://www.pbis.org/>
- <http://www.colorincolorado.org/>
- <http://crpbis.org/>