

What Works, What We Think Works, and How It Can Work for You

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Agenda

- Introduction
- **What Works:** Understanding the WWC standards of evidence
- **What We Think Works:** Practice Guide recommendations
- **How It Can Work for You:** Implications for practice

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Introduction

Krista Kutash



Panel Members

- Mike Epstein (Chair)
 - University of Nebraska-Lincoln
- Marc Atkins
 - University of Illinois-Chicago
- Doug Cullinan
 - North Carolina State University
- Krista Kutash
 - University of South Florida
- Robin Weaver
 - Harmony Hills Elementary School Principal (Silver Spring, MD)



SRI Staff

- Michelle Woodbridge (Study Director, author)
- Mary Wagner (Senior Consultant, author)
- Jennifer Yu (Researcher, author)
- Carl Sumi (Researcher)



Can You Handle the Truth?

Understanding the What Works Clearinghouse Review Process and Evidence Standards

Carl Sumi



Purpose of The What Works Clearinghouse

- The mission of the WWC is to “be a central and trusted source of scientific evidence for what works in education.”
- WWC generates several different products:
 - Intervention reports
 - Topic reports
 - Quick reviews
 - Practice guides

Getting Started: The WWC Review Process

- Once a topic area is selected, steps include:
- Convene topic area **team**
 - Consists of a PI, Deputy PI, content expert, project coordinator, and certified reviewers
 - Develop **protocol**
 - Guides the parameters for the topic area review (e.g., timeframe for studies, sample, study design, etc)
 - Conduct **literature search** and **eligibility screen**
 - Screen for studies that examine (for example):
 - Effectiveness of an intervention
 - Students in the appropriate age range
 - At least one relevant outcome

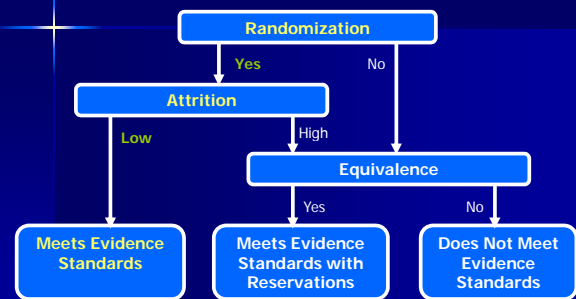
WWC Evidence Standards

Reviewed studies receive 1 of 3 ratings:

- **Meets Evidence Standards**
 - Strong evidence of the intervention's effectiveness
- **Meets Evidence Standards with Reservations**
 - Weaker evidence of the effectiveness
- **Does Not Meet Evidence Standards**
 - Insufficient evidence of the effectiveness



WWC Study Rating



*Figure from WWC Procedures and Version 2 Standards Handbook, December 2008

WWC Study Rating



Rating affected by:

- Rigor of **design**
 - RCT or QED studies
 - Regression discontinuity and single subject standards under development
- **Validity** and **reliability** of outcome measures
- **Equivalence** of groups at baseline
- Overall and differential **attrition**
- Absence of **confounds** due to:
 - N of 1
 - Intervention combined with another intervention
 - Not implemented as designed

WWC Resources

For more information:

- **What Works Clearinghouse Procedures and Version 2 Standards Handbook** (December 2008)
 - Available at <whatworks.ed.gov> under “Reference Resources”
- **What Works for Practitioners**
 - Guide to help navigate resources of WWC

WWC Practice Guides: Purpose

- Supply discrete recommendations that are intended to be *actionable*.
- Provide a *coherent* approach to a multifaceted problem.
- Explicitly connect each recommendation to the *level of evidence* supporting it (strong, moderate, or low)

Continued...

WWC Practice Guides: Purpose

- Use *expertise and judgment of a panel* to identify the most important research relevant to the recommendations.
- Bring the *best available evidence* to bear on challenges that cannot currently be addressed by single interventions or programs.

Levels of Evidence for Practice Guides



- **Strong**
 - High internal and external validity, including:
 - Evidence of effectiveness with no contradictory evidence, OR
 - One large, well-designed, randomized, multisite effectiveness trial with no contradictory evidence
- **Moderate**
 - High internal but moderate external validity, OR
 - Moderate internal but high external validity, including:
 - Small sample sizes or conditions that limit generalizability, OR
 - Nonequivalent comparison groups at pretest but consistently enhanced outcomes for participants, OR
 - Correlational research with strong controls for selection bias
- **Low**
 - Evidence not meeting standards above

Strong Evidence: Example*

- The academic impact of **peer-assisted learning** and **cooperative groups** on English learners
 - Two randomized controlled trials and two high-quality quasi experiments in classrooms
 - Studies conducted across multiple sites by multiple research teams who reached **consistent conclusions** about the positive academic impacts
 - Noted some reservations and weaknesses concerning the quasi-experimental designs

*See Appendix 1 (pp. 27-28) of EL Practice Guide

Moderate Evidence: Example*

- Integration of text and **graphics** in support of learning
 - Multiple laboratory and classroom experiments and classroom quasi-experiments in a variety of content domains
 - Series of randomized studies including **college students** and their learning of scientific processes and problem-solving (e.g., how to most effectively use a bicycle tire pump)

*See Appendix 1 (p. 37) of Student Learning Practice Guide

Low Evidence: Example*


- The effectiveness of **formal/academic English instruction** on English learners.
 - Little empirical research
 - Relevant studies addressed very selective aspects of academic English and only indirectly addressed classroom instruction
 - Additional support from a recent classroom observational study
 - Strong consensus of expert opinion
 - Agreement on the importance of explicit and deliberate instruction of academic English from the earliest grades

*See Appendix 1 (p. 26) of EL Practice Guide

Does Practice Make Perfect?

Behavior Practice Guide Recommendations

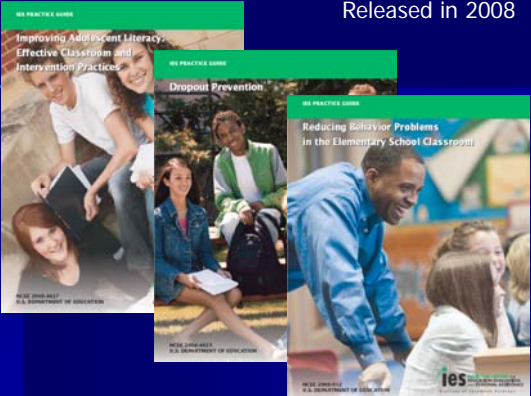
Michelle Woodbridge



Released in 2007



Released in 2008



Behavior Practice Guide: Scope

- Primary audiences include:
 - General education elementary school teachers who will implement practices
 - Elementary school/district administrators who will promote practices
- Final product is “more like a consensus panel report than a meta-analysis” in terms of breadth and complexity of topic addressed.


Behavior Practice Guide: Production Steps

- Select chair and panelists
- Achieve consensus on recommendations and justify with supporting evidence
- Draft document within prescribed time period (approximately 3 mos.)
- Receive feedback from IES and a rigorous external peer review process; revise document as necessary

Total project timeline = about 8 months

Overall Format/Content


- Overview
 - Behavior problems in the classroom
- Recommendations
 - Summary of evidence
 - Implementation guidelines
 - Roadblocks and solutions
- Appendix
 - Technical information on studies
 - Designs, sample sizes, effect sizes
- References



Recommendations

- Broader points about improving practice
 - Drawn from evidence about the effectiveness of specific programs and practices, including:
 - Suggestions for how to implement in school settings (☑ checklist)
 - Provide district-, school-, and teacher-level guidelines
 - Descriptions of potential roadblocks
 - Refute myths with evidence
 - Suggest solutions

Recommendation 1



- Identify specifics of problem behavior and conditions that prompt and reinforce it.
 - Level of Evidence: Moderate
 - Implementation Guidelines
 - Observe and record frequency of problem behavior.
 - Identify what prompts and reinforces behavior.
 - Potential Roadblocks and Solutions
 - Problem behaviors may persist even after intervening.
 - Interventions require sufficient time and consistency.
 - Intervene for at least one month, continue to observe and record behavior, and try new approach if necessary.
 - A single behavior may stem from multiple triggers.

Recommendation 1


Level of Evidence



- Why Moderate?
 - Multiple single-subject research studies demonstrated effectiveness of interventions tailored to antecedents and consequences of behavior problems
 - Only emerging evidence on feasibility of general educator applying assessment-based approaches


Recommendation 2

- Modify the classroom learning environment to decrease problem behavior.
 - Level of Evidence: Strong
 - Implementation Guidelines
 - Reinforce classroom expectations.
 - Adapt/vary instruction to increase engagement.
 - Potential Roadblocks and Solutions
 - Teachers do not want to disrupt routines.
 - Time used to practice new routines will increase quality of instructional time in the end.
 - Prepare students well for change; ask students to model new behaviors as reward for appropriate behavior.



Recommendation 2


Level of Evidence



- Why Strong?
 - 3 RCTs, 1 QED, and 6 single-subject research studies demonstrated empirical support for:
 - Preventive classroom management
 - Direct and differentiated instruction
 - Peer tutoring

Recommendation 3

- Teach and reinforce new skills to increase appropriate behavior and preserve a positive classroom climate.
 - Level of Evidence: Strong
 - Implementation Guidelines
 - Teach replacement skills explicitly.
 - Reinforce appropriate behavior; withhold reinforcement for inappropriate behavior.
 - Potential Roadblocks and Solutions
 - Teachers fear extrinsic rewards undermine student motivation.
 - Tie reinforcement to student competence.
 - Reward students with behavior-specific praise.




Recommendation 3

Level of Evidence

- Why **Strong**?
 - 5 RCTs and 3 single-subject research studies demonstrated effectiveness of teaching and reinforcing replacement behaviors to reduce inappropriate behaviors
 - Attention seeking
 - Social skills
 - Problem solving
 - Self management
 - Self control

Recommendation 4

- Draw on relationships with colleagues and families for guidance and support.
 - Level of Evidence: **Moderate**
 - Implementation Guidelines
 - Build collaborative professional partnerships.
 - Encourage families to participate in reinforcing appropriate behavior.
 - Potential Roadblocks and Solutions
 - Faculty meetings can be a waste of teachers' time.
 - Administrators should encourage a culture of professional learning.
 - Use time together productively to joint problem-solve.




Recommendation 4

Level of Evidence

- Why **Moderate**?
 - 1 OED and 1 single-subject study demonstrated peer teacher relationships (i.e., coaching) improved student social skills and engagement
 - 1 RCT confirmed effectiveness of teachers' consulting with behavioral experts
 - Limitation: study conducted specifically with ADHD population
 - 2 RCTs confirmed positive effect of teacher-parent partnerships
 - Limitation: study conducted with specific teacher-parent program

Recommendation 5

- Implement schoolwide strategies to reduce negative and foster positive interactions.
 - Level of Evidence: **Moderate**
 - Implementation Guidelines
 - Involve school improvement team in collecting data about school "hot spots."
 - Adopt program that aligns with school climate.
 - Potential Roadblocks and Solutions
 - Packaged programs may be too costly.
 - Consider evidence-based programs that meet school needs.
 - If too costly, encourage school staff to observe patterns of problem behavior to assist in formulating an intervention.



Recommendation 5

Level of Evidence

- Why **Moderate**?
 - 1 OED study demonstrated positive effects of schoolwide changes (e.g., structure, organization) on student social relationships and acceptance
 - 4 RCTs and 1 single-subject study documented impact of schoolwide intervention program on reduced problem behaviors
 - Limitation: RCTs support only specific schoolwide program, not all components of recommendation.

Principles

- Trusting and supportive relationships lay the foundation for positive behavior.
- There is increased need for building cultural competence among school communities.
- Collecting data is critical in targeting resources and changing strategies to improve behavior.



To download and print

<http://ies.ed.gov/ncee/wwc/publications/practiceguides/>



How It Can Work for You: Implications for Practice

Mike Epstein



General Education Teachers

- Implement IES Practice Guide **recommendations**
- Develop positive teacher-student **relationships**
- Be **data** driven
- Work in **teams** with other teachers



Special Education Teachers

- Implement IES Practice Guide **recommendations**
- Work with **general education** staff
- Be good consumers of **research**



Mental Health Staff

- Be knowledgeable of **recommendations**
- **Collaborate** with school personnel as partners



School Administrators

- Support comprehensive **staff development** programs
- Facilitate positive **teacher-teacher** relationships
- Support **schoolwide behavior** programs
- Use **schoolwide data** systems



Parent/Family Members

- Alert teachers to practice guide recommendations
- Become active partners with school personnel



University Faculty

- Implement scientifically-based preparation programs
- Contribute to evidence base
- Enhance research skills in leadership preparation programs



Conclusion

- Final Comments/Wrap-up
 - *What Works*: A framework for designing, analyzing, and reporting studies to meet WWC standards
 - *What We Think Works*: Practical advice for facing behavioral challenges in the classroom
 - *How It Can Work for You*: Practice Guide applications for a wide range of practitioners
- Questions/Suggestions

