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

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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

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

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

For more information:
  - 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)

**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

**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)

**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
Does Practice Make Perfect?

Behavior Practice Guide
Recommendations

Michelle Woodbridge

Released in 2007

Behavior Practice Guide: 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

Released in 2008

Behavior Practice Guide: 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: Behavior Practice Guide:
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 (GI checklist)
    - Provide district-, school-, and teacher-level guidelines
    - Descriptions of potential roadblocks
      - Refute myths with evidence
      - Suggest solutions

Recommendation 1
Level of Evidence: Moderate

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

Implementation Guidelines
- Observe and record frequency of problem behavior.
- Identify what prompts and reinforces behavior.
- 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 2
Level of Evidence: Strong

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

Implementation Guidelines
- Reinforce classroom expectations.
- Adapt/vary instruction to increase engagement.
- Prepare students well for change; ask students to model new behaviors as reward for appropriate behavior.
- Time used to practice new routines will increase quality of instructional time in the end.
- A single behavior may stem from multiple triggers.

Recommendation 3
Level of Evidence: Strong

Teach and reinforce new skills to increase appropriate behavior and preserve a positive classroom climate.

Implementation Guidelines
- Teach replacement skills explicitly.
- Reinforce appropriate behavior; withhold reinforcement for inappropriate behavior.
- Interventions require sufficient time and consistency.
- A single behavior may stem from multiple triggers.

- 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**

**Level of Evidence**

- **Why Moderate?**
  - 1 QED 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**

**Level of Evidence**

- **Why Moderate?**
  - 1 QED 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

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
22nd Annual RTC Conference
Presented in Tampa, March 2009

**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