

# WWC Review Process

## June 2008

### Overview

The What Works Clearinghouse (WWC) has established a comprehensive, systematic process to review studies of education interventions. Through a literature review, initial screening process, and application of evidence standards, a review team dedicated to each topic area develops reports which result in one of three ratings for each study: "Meets Evidence Standards," "Meets Evidence Standards with Reservations," or "Does Not Meet Evidence Screens."

### Developing a Team, Work Plan, and Protocol

Before reviewing studies in a topic area, three initial steps must occur:

- Organize a review team composed of a Principal Investigator, a Deputy Principal Investigator, and research analysts;
- Create a work plan; and
- Develop a protocol that tailors the WWC Evidence Standards to the topic area.

Each review team consists of a Principal Investigator (PI), a Project Coordinator (PC), and research analysts. The PI for each topic is a well-known expert in his/her field and is responsible for leadership in conceptualizing the specific topic area, identifying and addressing issues during the review, and developing and reviewing topic and intervention reports.

The Deputy PI is an established researcher with relevant methodological and substantive expertise. The Deputy PI oversees the work of the WWC Review Team, reviews research ratings, and writes and revises the work plan, protocol, and draft and final reports in collaboration with the PI.

Research analysts have experience conducting critical reviews of research and have training in research design and methodology that is relevant to reviewing evidence of effectiveness. As part of the review team, research analysts review and summarize the evidence of effectiveness

### Literature Review and Screening

Once a topic is identified and a review team is in place, studies are gathered through an extensive search of published and unpublished research literature, including submissions from intervention developers, researchers, and the public.

Trained WWC staff members use the following strategies in collecting studies:

- **Hand Searches:** hand search the past 20 years (on average) of core journals for both general and targeted topics;
- **Electronic Databases:** identify keywords for each topic and search a variety of electronic databases for relevant studies;

- **Submissions:** incorporate studies submitted by the public;
- **Conference Proceedings:** search the conference proceedings of core and topic-relevant associations; contact individuals with potentially relevant presentations for their papers;
- **Website Searches:** search the websites of core and topic-relevant organizations and collect potentially relevant studies; and
- **Extensive Outreach:** contact topic experts and relevant organizations to request studies as well as to request recommendations of other people and organizations that are able to provide studies.

Gathered studies that meet broad relevancy and methodology criteria are then screened regarding the relevance of the intervention to the topic area, the relevance of the sample to the population of interest, the timeliness of the study, and the relevance and validity of the outcome measure. Studies that do not meet one or more of these criteria are categorized as "Does Not Meet Evidence Screens."

### Applying Evidence Standards

After the literature review, WWC staff determine the causal validity of each study, according to WWC Evidence Standards. Each study is then given one of three ratings: "Meets Evidence Standards," "Meets Evidence Standards with Reservations," and "Does Not Meet Evidence Screens." For more information on standards, please view the Standards section of the WWC website.

Studies that "Meet Evidence Standards" or "Meet Evidence Standards with Reservations" are reviewed further to describe and rate other important characteristics, including intervention fidelity, generalizability, outcome measures, testing of the intervention's effect within subgroups, and statistical analysis and reporting.

Studies categorized as "Does Not Meet Evidence Screens" may not pass for the following reasons:

- **Evaluation research design.** The study did not meet certain design standards. Study designs that provide the strongest evidence of effects include: randomized controlled trials, regression discontinuity designs, quasi-experimental designs, and single subject designs.
- **Topic area definition.** The study did not meet the intervention definition developed by the WWC for a particular topic, as defined in the topic protocol.
- **Time period definition.** The study was not conducted within the time period set for the topic, as defined in the topic protocol. Generally, the time period for WWC topics is within the last 20 years.
- **Relevant outcome.** The study did not report on at least one outcome relevant to the WWC review, as defined in the topic protocol.
- **Adequate outcome measure.** The study measure did not reliably quantify the relevant outcome that it was intended to measure.
- **Relevant sample.** The study did not include a sample relevant to the WWC review, as defined in the topic protocol.

- **Adequate reporting.** The study did not report adequate information to calculate the effect size for at least one measure of a relevant outcome. In the simplest randomized controlled trial, this requires that the study report means and standard deviations of the outcomes for the intervention and comparison groups respectively, and usually the sample sizes for the intervention and comparison groups. For more information on effect size calculations, please see “Effect Size Interpretation Guidelines,” in the WWC Document Library.

## Reporting System

The WWC has a two-tiered reporting system that generates reports on the intervention and topic level.

- **Intervention Reports:** Intervention reports are produced for interventions that have one or more studies that meet WWC Evidence Standards. The reports provide key findings from each of the studies pertaining to the particular intervention. Each report provides a description of the intervention, references all relevant research, and includes the rating of effectiveness and improvement index for outcomes associated with the topic. Intervention reports cannot be prepared for interventions with no studies that meet WWC Standards.
- **Topic Reports:** Topic reports briefly describe the topic and provide an overview of ratings of effectiveness, improvement indexes, and effect size by outcome areas for each intervention the WWC reviewed in the area. Topic reports also note the overall strength of the research base for each intervention, providing an accessible picture of interventions with studies that meet WWC Evidence Standards. The report covers only interventions that had studies passing WWC Standards.

## Quality Control

Quality control is built into every stage of the review process. All reports undergo extensive review, including the following: an opportunity for researchers who conducted the original study to review the study coding results; an opportunity for the intervention developer to review the intervention report; and external peer review.