REVIEW PROTOCOL FOR INDIVIDUAL STUDIES
VERSION 3.0 (MAY 2015)

This review protocol guides the review of studies that do not fall under the umbrella of a more specific review protocol. It should be used for the review of studies that were not identified through a literature search defined by another protocol (e.g. topic areas and practice guides). This review protocol is used in conjunction with the *WWC Procedures and Standards Handbook (version 3.0)*.

PURPOSE STATEMENT

What Works Clearinghouse (WWC) reviews are designed to provide education practitioners and policymakers with timely and objective assessments of the quality of the research evidence. These reviews focus primarily on studies of the effectiveness of education or school-based interventions serving students in pre-kindergarten through 12th grade (PK-12), as well as students in postsecondary (PS) settings. However, in some instances, they might focus on studies of interventions serving other groups, such as teachers or other school leaders.

All WWC reviews are governed by a review protocol that describes the procedures that will be followed when conducting the review. When a study has been identified through a literature search defined by another WWC protocol, the review is guided by that protocol. However, the WWC also examines studies that have been identified through other means, and this protocol guides their review.

ELIGIBILITY CRITERIA

Eligible Populations

The review of individual studies will include studies of interventions administered to students in prekindergarten through postsecondary education, along with teachers and other school leaders. The review may also examine analyses of subgroups based on characteristics of sample members.

Eligible Interventions

The study must examine an educational or school-based intervention. The WWC defines the term "intervention" broadly, and this term can include educational programs, policies, and practices. Therefore, the following types of interventions may be included:

- ***Programs.*** Educational programs are those that intend to either directly or indirectly improve the educational outcomes of students. These can include, for example, after-school programs, educational software, and mentoring programs.
- ***Curricula.*** Curricula, both intended as the primary instructional tool or designed to supplement the classroom material with differentiated instruction, remediation, or enrichment, are eligible for this review.
- ***Policies.*** Educational policies involve structural changes that are intended to either directly or indirectly improve the educational outcomes of students. Examples of educational policies include modifying the academic calendar and changing the number of credits required for graduation.
- ***Practices.*** The review includes both general and targeted practices. A general practice could be used with a wide range of participants and to address a wide range of learning goals. A targeted practice is intended to support instruction for a particular type of student or a particular learning goal for a narrowly defined knowledge or skill. Both general and targeted practices must be clearly described and commonly understood in the field and in the literature.

Eligible Research

The *WWC Procedures and Standards Handbook* discusses the types of research reviewed by the WWC in Section II Developing the Review Protocol and Identifying Relevant Literature (p. 4). In this review, the following additional parameters define the scope of research studies to be included:

- ***Timeframe*.** Studies must have been released or made public within the last 20 years.
- ***Language.*** The study must be available in English to be included in the review. Studies examining competencies in other languages will not be included in the review.
- ***Location.*** The study must include students in the United States, its territories or tribal entities, or in a country that is sufficiently similar to the United States that the study could be replicated in the United States (e.g., in which English is the societal language).

Eligible Outcomes

All educationally relevant outcomes examined in a study will be considered eligible for review under this protocol, and each outcome will be classified using domains defined by the WWC in other review protocols, when possible. The *WWC Procedures and Standards Handbook* discusses the types of outcomes, criteria the outcome must meet, and how outcomes are reported by the WWC in Section III: Subsection B.4 Outcome Eligibility and Reliability (pp. 16 –

19). This review follows the general guidance regarding reliability, categorical ordinal measures, and imputation.

DESIGN STANDARDS

Eligible studies are assessed against WWC design standards, as described in the *WWC Procedures and Standards Handbook* Section III: Screening and Reviewing Studies (pp. 8 – 21).

Sample Attrition

The *WWC Procedures and Standards Handbook* discusses the sample attrition standards used by the WWC in Section III: Subsection B.2 Sample Attrition: Is the combination of overall and differential attrition high? (pp. 11 – 15).

The default attrition boundary for a study reviewed under this protocol is the liberal boundary. This boundary was selected because it is the most common boundary used across WWC review protocols, suggesting that in typical education studies, attrition is not thought to be strongly related to intervention status. The lead methodologist, in consultation with a substantive expert, may choose the conservative boundary for any particular review effort if there seems to be good reason for the particular study.

Baseline Equivalence

If the study design is a quasi-experimental design or either a randomized controlled trial or regression discontinuity design with high levels of attrition or concerns about assignment, the study must demonstrate baseline equivalence of the intervention and comparison groups for the analytic sample. The onus for demonstrating equivalence rests with the authors. The *WWC Procedures and Standards Handbook* discusses how authors must demonstrate baseline equivalence in Section III: Subsection B.3 Baseline equivalence: Is equivalence established at baseline for the groups in the analytic sample? (pp. 15 and 16).

For student outcomes, baseline equivalence of the intervention and comparison groups in the analytic sample should be demonstrated on a pretest in the same domain as the outcome. If such a measure does not exist (e.g., college completion), then baseline equivalence should be demonstrated on a measure of academic achievement and on a measure of socio-economic status (for example, student free and reduced price lunch status, or family income). For teacher outcomes, baseline equivalence should be established based on Table 1 from the Teacher Training, Evaluation, and Compensation review protocol.

For other sample or setting characteristics that are believed to be associated with the outcome, though perhaps less correlated than the pretest, a large baseline difference could be evidence that the intervention and comparison groups are not sufficiently comparable for the purposes

of the review. When differences in these characteristics are systematic due to the study design or larger than 0.50 standard deviations, the review team leadership has discretion to determine the groups are too dissimilar for the analysis to provide an unbiased estimate of the effect of the intervention.

Statistical Adjustment

If a pretest is available for an outcome and the difference between conditions is shown to be within the range that requires statistical adjustment, the adjustment is needed only for that outcome. For outcomes that do not have a pretest, an adjustment is required for all covariates (i.e., a measure of academic achievement and socio-economic status) shown to be within the range that requires statistical adjustment, applied to all outcomes in the study without pretests.

Analyses

Studies may include a wide range of analyses, including those described by the table below.

	Primary	Secondary
Research question	Confirmatory	Exploratory
Sample	Full	Subgroups
Measure	Composite	Subtests, Subscales
Time period	End of intervention (PK-12) Longest follow up (PS)	Other time points
Analytic methods	Benchmark analysis	Sensitivity analyses

The WWC will prioritize the review of primary analyses; however, each of these analyses may be reviewed by the WWC. A study's rating will be determined by the highest rating achieved across all analyses. If the highest possible rating for a study has been obtained from a review of the primary analyses, review team leadership may decide to not query for additional information needed to rate secondary findings.

WWC Adjustments

The *WWC Procedures and Standards Handbook* discusses the types of adjustments made by the WWC in Section IV: Subsection B Statistical Significance of Findings (p. 24). For characterizing the findings from a study, the WWC will conduct the multiple comparison correction separately across primary and secondary analyses.

Other Study Designs

Studies that use regression discontinuity or single-case designs will be reviewed using the pilot standards in Appendix D and Appendix E, respectively, from the *WWC Procedures and Standards Handbook*.