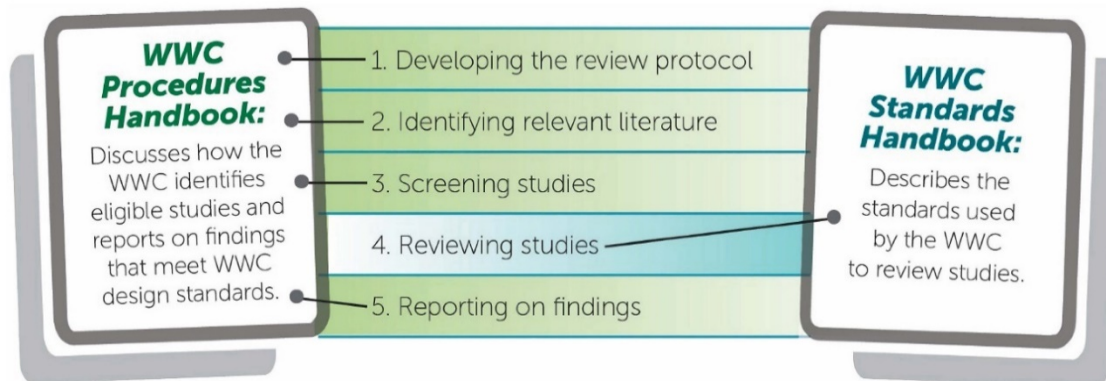


Summary of Changes to WWC Procedures and Standards in the Version 4.1 Handbooks

The What Works Clearinghouse ([WWC](#)) aims to be a central and trusted source of scientific evidence for what works to improve education outcomes. The WWC identifies existing research on education interventions, assesses the quality of this research, and summarizes and disseminates the evidence from studies that meet WWC standards. In January 2020, the WWC released updated and improved procedures and standards to guide its work. This document describes the changes between version 4.0 and version 4.1 of the *WWC Procedures Handbook* and the *WWC Standards Handbook*.



The *WWC Procedures Handbook, Version 4.1*, provides a detailed description of the procedures the WWC uses in the systematic review process—specifically, steps 1–3 and 5 of the graphic below. The *WWC Standards Handbook, Version 4.1*, provides a detailed description of the standards that the WWC uses to review studies (step 4 of the graphic below).



Collaborating to update the WWC’s procedures and standards

The Institute of Education Sciences (IES) consulted with the WWC’s Statistical, Technical, and Analysis Team (STAT)—which includes outside methodological consultants as well as key staff from different WWC contractors—on the development of the improvements in the *WWC Procedures Handbook, Version 4.1* and the *WWC Standards Handbook, Version 4.1*.

Experts consulted to revise WWC procedures and standards

WWC STAT and Key Contractor Staff: Sarah Caverly, Mike Garet, Fran Harmon, Larry Hedges, Daniel Hubbard, Rebecca Maynard, Terri Pigott, Joshua Polanin, Allan Porowski, James Pustejovsky, Jordan Rickles, David Rindskopf, Jessaca Spybrook, Danny Swan, Emily Tanner-Smith, Joe Taylor, Elizabeth Tipton, Jeffrey Valentine, Elias Walsh, Christopher Weiss, Ryan Williams, and Vivian Wong

Institute of Education Sciences Staff: Jonathan Jacobson and Erin Pollard

What's new in version 4.1 of the *WWC Procedures Handbook* and *WWC Standards Handbook*?

- **New procedures for synthesizing study findings in intervention reports and practice guides.**
Previously, the WWC used a vote-counting approach to determine how multiple studies in intervention reports and practice guides informed an evidence rating. Now, the WWC will use the result of a **fixed-effects meta-analysis** to characterize evidence from multiple studies, weighting effect sizes by the inverse of their variance.
- **New procedures for determining effectiveness ratings in intervention reports.**
The WWC will now use the fixed-effects meta-analytic average, its statistical significance, and the proportion of weight from studies that have a rating of *Meets WWC Standards Without Reservations* to determine the effectiveness rating for an intervention.
- **Removal of the “substantively important” designation.**
Previously, the WWC characterized effect sizes above 0.25 as “substantively important” if they were not statistically significant. The updated handbooks characterize effect sizes solely according to their sign and statistical significance, without considering their magnitude.
- **Removal of the “pilot” designation for WWC single-case design (SCD) standards**
The single-case design standards have been fully incorporated into a section of the *WWC Standards Handbook, Version 4.1*.
- **New procedures for calculating effect sizes for single-case design studies.**
Where feasible and appropriate, the WWC will calculate a **design-comparable effect size** for the single-case design studies that meet WWC standards. Language and formulas for these calculations have been added to the handbooks. The WWC will use visual analysis techniques to assess whether and how SCD studies are rated *Meets WWC SCD Standards* and to inform the estimation of design-comparable effect sizes. The WWC no longer reports effectiveness ratings using the proportion of SCD experiments demonstrating positive effects on the basis of visual analysis (that is, the approach documented in a [January 2017 Handbook supplement](#)).
- **New procedures for estimating effect sizes and standard errors.**
The WWC clarified how effect sizes from regression discontinuity designs can be estimated and also updated the calculations of several difference-in-difference effect sizes. The new *Procedures Handbook* includes the relevant formulas for calculating both effect sizes and standard errors for study findings that meet WWC standards.
- **New procedures for synthesizing multiple effect sizes within a single domain.**
The WWC's procedures for combining multiple, dependent, effect sizes from a domain within a study now incorporate information about the correlation among those effects to arrive at a more efficient variance estimate.
- **Updates to principles for systematic searching of the literature.**
The WWC designates the **Educational Resources Information Center (ERIC)** as the initial source of studies for WWC reviews. Protocol authors now have additional discretion to specify relevant search procedures and multidisciplinary databases for topic areas.
- **Other improvements to WWC procedures and standards, including:**
 - Guidance on **which manuscript takes precedence in WWC reviews** when multiple manuscripts are available.
 - Allowance for literature searches to include **master's theses**.
 - Addition of examples of **confounding factors** in single-case design studies.
 - **Removal** of text implying that the WWC must determine the direction of an effect for a study to meet WWC standards.