

# **REVIEW PROTOCOL FOR SECONDARY WRITING PRACTICE GUIDE VERSION 3.0 (APRIL, 2015)**

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This protocol guides the review of research that informs the recommendations contained in the What Works Clearinghouse (WWC) practice guide, “Teaching Secondary Students to Write Effectively” The review-specific protocol is used in conjunction with the [WWC Procedures and Standards Handbook \(version 3.0\)](#).

## **PURPOSE STATEMENT**

This practice guide focuses on instructional strategies, interventions, and practices designed to improve writing skills with three types of texts: argumentative/persuasive, informational/explanatory, and narrative. The guide will focus on students in grades 6-12, and on practices targeted at general education students and students struggling with writing. The primary focus will be on practices that address overall writing quality, informational writing, sentence structure, word choice, writing output, writing processes, and writing style.

The following research question guides this review: “Which instructional practices improve secondary students’ writing skills?” Specific recommendations in the guide will center on questions like:

- How can teachers help students acquire a process to write and take the actions needed to produce high-quality writing?
- How can teachers use technology to improve writing instruction?
- How can teachers support writers as they compose?
- How can teachers help students produce effective informational text based on arguments and evidence?
- How can teachers help students produce high-quality persuasive/argumentative texts?
- How can teachers help students acquire strong sentence construction skills in writing?
- How can teachers work together across content areas to help students improve their writing skills?

The guide will describe how to adapt practices for students in different grades and include some guidance on the teaching of writing skills at specific grade levels.

## PROCEDURES FOR CONDUCTING THE LITERATURE SEARCH

The *WWC Procedures and Standards Handbook* discusses the procedures for conducting a literature search in Section II: Developing the Review Protocol and Identifying Relevant Literature (p. 4) and in Appendix B: Policies for Searching and Prioritizing Studies for Review.

### Search Terms

The following table presents the search terms by category.

Category	Search Terms
Study Design	<ul style="list-style-type: none"> <li>• Control group*</li> <li>• Comparison group*</li> <li>• Matched group*</li> <li>• Random*</li> <li>• Assign*</li> <li>• Baseline</li> <li>• Experiment*</li> <li>• Evaluat*</li> <li>• Causal*</li> <li>• Post test*</li> <li>• Pre test*</li> <li>• Randomized control* trial*</li> <li>• RCT</li> <li>• Quasi*experiment*</li> <li>• Quasiexperimental</li> <li>• QED</li> <li>• Regression discontinuity</li> <li>• Changing criterion</li> <li>• Intrasubject replication</li> <li>• Multiple baseline</li> <li>• Multi*element</li> <li>• Multielement</li> <li>• Single case</li> <li>• Single subject</li> <li>• ABAB</li> <li>• Alternating treatment*</li> <li>• Simultaneous treatment*</li> <li>• Reversal design*</li> <li>• Withdrawal design*</li> </ul>
Topic	<ul style="list-style-type: none"> <li>• Writing</li> <li>• Narrative</li> <li>• Expository</li> <li>• Sentence skill*</li> <li>• Sentence fluenc*</li> <li>• Inform* text</li> <li>• Ideation</li> <li>• Compos*</li> <li>• Persuasive</li> <li>• Argumentati*</li> <li>• Grammar</li> <li>• Literary analys*</li> <li>• Genre</li> <li>• Essay</li> </ul>
Intervention	<ul style="list-style-type: none"> <li>• Interven*</li> <li>• Curricul*</li> <li>• Program*</li> <li>• Strateg*</li> <li>• Train*</li> <li>• Approach*</li> <li>• Monitor*</li> <li>• Treatment*</li> </ul>

	<ul style="list-style-type: none"> <li>• Instruct*</li> <li>• Teach*</li> <li>• Demonstration</li> <li>• Pilot</li> </ul>	<ul style="list-style-type: none"> <li>• Self-regulat*</li> <li>• Transfer</li> <li>• Practice*</li> <li>• Model</li> </ul>
Population	<ul style="list-style-type: none"> <li>• Middle school*</li> <li>• Middle grade*</li> <li>• High school*</li> <li>• Secondary school*</li> <li>• Junior High</li> <li>• Sixth grade*</li> <li>• six grade*</li> <li>• 6th grade*</li> <li>• 6 grade*</li> <li>• Seventh grade*</li> <li>• seven grade*</li> <li>• 7th grade*</li> <li>• 7 grade*</li> <li>• eighth grade*</li> <li>• eight grade*</li> <li>• 8th grade*</li> <li>• 8 grade*</li> </ul>	<ul style="list-style-type: none"> <li>• ninth grade*</li> <li>• nine grade*</li> <li>• 9th grade*</li> <li>• 9 grade*</li> <li>• tenth grade*</li> <li>• ten grade*</li> <li>• 10th grade*</li> <li>• 10 grade*</li> <li>• eleventh grade*</li> <li>• eleven grade*</li> <li>• 11th grade*</li> <li>• 11 grade*</li> <li>• twelfth grade*</li> <li>• twelve grade*</li> <li>• 12th grade*</li> <li>• 12 grade*</li> </ul>
Outcomes	<ul style="list-style-type: none"> <li>• Achieve*</li> <li>• Improve*</li> <li>• Outcome*</li> <li>• Effect*</li> <li>• Develop*</li> <li>• Skill*</li> <li>• Assess*</li> <li>• Efficacy</li> <li>• Benefit</li> <li>• Sentence structure</li> <li>• Genre knowledge</li> <li>• Use of evidence</li> </ul>	<ul style="list-style-type: none"> <li>• Test*</li> <li>• Progress*</li> <li>• Acqui*</li> <li>• Portfolio assessment*</li> <li>• Writing quality</li> <li>• Fluency</li> <li>• Impact</li> <li>• Writing process*</li> <li>• Word choice</li> <li>• Writing style</li> <li>• Writing output</li> </ul>

## Additional Sources

In addition to those databases listed in the *WWC Procedures and Standards Handbook*, Appendix B, this review will search the EJS E-Journals electronic database.

The websites listed in the *WWC Procedures and Standards Handbook*, Appendix B will also be searched.

The review team will also solicit study recommendations of publicly available studies from panel members.

## ELIGIBILITY CRITERIA

### Eligible Populations

In this guide, the following populations are of interest:

- **Grade range.** The practice guide will review studies of interventions administered to students in secondary schools in grades 6-12, or in any subset of these grades. Studies that contain students in other grades will not be included unless (a) study reports disaggregated results for students in eligible grades, or (b) students in eligible grades represent the majority of the aggregated mixed-age sample. If the study does not make explicit the number of students in each grade, a study will be included if 50% or more of the grades included in the sample falls within the eligible grade range and students in those grades are in secondary schools.
- **Location.** Students must attend a school for students age 12 to 18; for example, a secondary school such as a middle school or high school in the United States. Studies can be conducted in or outside of the United States.<sup>1</sup>
- **Overlap with other WWC areas.** To avoid overlap with the Elementary Writing Practice Guide, this guide will not include studies of sixth grade students in an elementary school setting. This guide will include studies of seventh and eighth grade students in a K-8 setting.
- **Language and ability-based subgroups.** The guide will consider:
  - Studies that include students who have limited English language proficiency, although reviews will focus on results that disaggregate the

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<sup>1</sup> Studies not conducted in the United States will be considered when determining the level of evidence for each recommendation. The level of evidence will take into account the similarity of the educational context to the United States and the similarity of the instructional language's orthography—the approach to writing a language, including spelling rules and punctuation—to English.

native-speakers from other students if such disaggregated results are available.

- Studies of students identified as at-risk of academic failure, students receiving remedial instruction, or other students who may be receiving extra assistance but who do not have an identified disability. For studies that include both general education students and students at-risk, receiving remedial instruction, or other extra assistance, the review will focus on disaggregated results if available.

## Eligible Interventions

Only instructional practices that are replicable (i.e., can be reproduced) and can be implemented by a teacher in a secondary school classroom are eligible for review. These may include strategies used by teachers in classrooms, or those used by reading coaches, paraprofessional educators, or tutors in the school.

Interventions that target English learners or equivalent interventions targeting language learners in non-English-speaking countries are not eligible, as these interventions might use approaches that are not relevant for native speakers. The guide will focus on interventions aimed at general education students to avoid overlap with other practice guides.

The following information about the intervention and implementation must be known to reliably replicate the intervention with different participants, in other settings, and at other times:

- Intervention description: skills being targeted, approach to enhancing the skill(s) (e.g., strategies, activities, and materials), unit of delivery of the intervention (for example, whole group, individual), medium/media of delivery (for example, teacher-led instruction or software), and targeted population
- Intervention duration and intensity
- Description of individuals delivering or administering the intervention

In this practice guide, the following types of interventions will be prioritized:

- **Practices.** A practice is a named approach to promoting students' development that educators implement by interacting with students and materials in classrooms. The guide will include named practices that are clearly described, commonly understood, and used in published works by more than one investigator or team of investigators. Several terms may be used in the literature to refer to the same practice. A named practice may also refer to an array of specific procedures.

The guide excludes (1) practices related to professional development, teacher preparation, and textbook design issues, and (2) other interventions not appropriate for a teacher's practice guide

on writing, such as comprehensive school reform. Because the practice guide is aimed at providing strategies for classroom teachers, studies of school or district-wide policies are excluded.

Both “branded” and “non-branded” interventions will be reviewed. Branded interventions are commercial or published programs and products that may possess any of the following characteristics:

- An external developer who provides technical assistance (e.g., instructions/guidance on the implementation of the intervention) or sells or distributes the intervention.
- Trademark or copyright.

### **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). Additionally, in this review, the following additional parameters define the scope of research studies to be included:

- **Topic.** The recommendations in the practice guide will focus on instructional strategies that improve the writing skills of students in grades 6 through 12.
- **Time frame.** The study must have been published between 1995 and March 2015; earlier or later work will be reviewed if suggested by a panelist.
- **Sample.** The study sample must meet the requirements described in the “Eligible Populations” section above.
- **Language.** The study must be available in English to be included in the review. Studies examining competencies in other languages will be included in the review.
- **Location.** The study can be conducted in any country.
- **Publication.** Dissertations are ineligible, unless specifically requested by a panelist.

### **Eligible Outcomes**

The practice guide is primarily focused on practices designed to help students improve writing skills and produce high-quality writing. The guide will consider both measures of student ability based on original, student-written products (or “authentic writing”), as well as norm-referenced standardized tests of writing achievement. Assessments that include authentic writing are generally good predictors of writing quality. Standardized tests are also included because

teachers are increasingly called upon to demonstrate improvement on these tests and are likely to be interested in interventions that have demonstrated impacts on these types of assessments.

This guide includes outcomes in the following domains:

**Audience**, or purpose, refers to the use of appropriate style, complexity, and vocabulary for the intended audience or purpose of the composition.

**Genre elements**, sometimes referred to as “text elements,” assess the presence or quality of specific features typical of a particular genre. For example, the elements of a story might have included place, a starting event, action, and ending. For informational texts, elements might include problem and solution.

**Ideation** refers to the development and quality of ideas included in writing. Qualitative measures of ideation included the overall richness of ideas in a composition. Quantitative measures of ideation included the number of different ideas.

**Organization**, or text structure, assesses the structure of a composition. This might have included the connection between ideas in the text, as well as how well individual ideas were organized or connected to meet a writer’s purpose (often referred to as “cohesiveness”).

**Sentence structure** assesses sentence correctness or sentence complexity. For example, a sentence-structure measurement might have counted the number of sentences in a composition that were syntactically correct.

**Use of evidence** refers to making arguments in writing supported by reasoning and data. Outcomes in this construct relate students’ ability to identify and analyze relevant evidence, and develop and support claims based on that evidence.

**Word choice** refers to the words used by the student in his or her writing. Word choice may have been assessed by counting specific types of words (e.g., the number of different words or the inclusion of content-specific words), or by examining the complexity of words (e.g., number of syllables).

**Writing output** refers to the actual quantity of text produced. Some examples of output measures included the number of sentences or the number of words in a composition.

**Writing processes** refers to actions that students take in the process of writing, including goal setting, planning, and revision.

**Overall writing quality** measures the overall effectiveness of a student’s writing, and might have included assessments of intermediary outcome domains—including ideation, genre (or text) elements, organization, output, sentence structure, word choice, use of evidence and

audience—in a single assessment of the quality of a piece of writing. Outcomes that measure only one of these intermediary domains will be classified as that intermediary domain. Overall writing quality can be assessed either analytically or holistically. *Analytic writing quality* refers to measures using scales for which multiple attributes of writing (e.g., mechanics, vocabulary, sentence structure, organization, ideation, and voice) are each judged separately and then summed to obtain a single score. *Holistic writing quality* refers to measures where the assessor makes a single judgment about overall quality, considering a variety of attributes at the same time.

Only studies that include a writing outcome in the above domains are eligible for review. However, if a study includes an eligible writing outcome as well as a non-writing outcome in reading, math, science, or social studies achievement, we will report the non-writing outcome in the in the practice guide. Non-writing outcomes will not affect the level of evidence for a recommendation.

## **EVIDENCE STANDARDS**

Eligible studies are assessed against WWC evidence standards, as described in the *WWC Procedures and Standards Handbook* Section III: Screening and Reviewing Studies (pp. 7–21).

### **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).

This review uses the ***conservative*** boundary for attrition. This boundary was based on the assumption that attrition in studies of secondary writing interventions could be due to factors that were strongly related to intervention status. For example, students in larger schools or districts may choose to change classes or subjects, or students may choose to not attend classes, because of the intervention. The *WWC Procedures and Standards Handbook* contains a figure illustrating the attrition boundary and an associated table with attrition levels that define high and low attrition. Based on the choice of the boundary, the study review guide calculates attrition and whether it is high or low.

### **Baseline Equivalence**

If the study design is a randomized controlled trial or regression discontinuity design with high levels of attrition or a quasi-experimental design, the study must demonstrate baseline equivalence of the intervention and comparison groups for the analytic sample. The onus for demonstrating equivalence in these studies 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).

Baseline equivalence must be demonstrated for the intervention and comparison groups in the analytic sample on the following pre-intervention (or baseline) characteristics:

- A pre-intervention measure in the domain of the outcome measure used in the analysis; or
- If a pre-intervention measure in the domain of the outcome measure used in the analysis is not available, a pre-intervention measure in any of the other writing domains detailed in the “Eligible Domains” section above can be used. For example, a pretest from the overall writing quality domain can be used to establish baseline equivalence for a genre outcome when a genre pretest is unavailable.
- Pretest measures in domains other than the eligible writing domains (for example, reading comprehension) have to be approved on an individual basis by the evidence lead in consultation with the panel chair.

This review requires that in a domain that requires statistical adjustments, the adjustment is made only for that outcome. For example, if A, B, and C are available as pre- and post-intervention measures, and the pre-intervention difference in B requires statistical adjustment, only the analysis of outcome B must adjust for B.

A review should clearly document if a study has a baseline difference in any of the following characteristics, since it could be evidence that the populations were drawn from different settings and that the intervention and comparison groups are not sufficiently comparable for the purposes of this review:

- Percentage of students with low socioeconomic status
- Percentage of identified special education students
- Race or ethnicity
- Gender
- Percentage of students who are not native language speakers
- Teacher training or experience

The provision of such information, however, is not a requirement of the review.

## **Outcomes**

In this review, the requirements for outcome measures differ from guidance in the *WWC Procedures and Standards Handbook* in the following way(s): This review follows more stringent guidance with respect to reliability. Given the subjective nature of many writing assignments, the reliability measures are assessed using inter-rater reliability (IRR) calculations. Outcomes must

meet the minimum standard for IRR of a 0.60 correlation or 80 percent agreement within one point. When IRR was assessed as within two or more points, it is insufficient to meet the standards for this review. IRR must have been established on the study sample. In other words, “trained to reliability” is not sufficient for establishing IRR. IRR does not need to be established on the full study sample. If the authors did not specify the sample on which IRR was established, the review assumes it was assessed on the study sample. Studies are not required to document IRR on the study sample for standardized measures. IRR is not required for some measures that are more objective (for example, word count); however, these measures have to be approved on an individual basis by the evidence lead in consultation with the panel chair.

### **Statistical 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 (pp. 24–26).

### **Other Study Designs**

Studies that use regression discontinuity or single-case designs are eligible for review using the appropriate pilot standards.

The *WWC Procedures and Standards Handbook* discusses the pilot standards for reviewing regression discontinuity design studies in Appendix D.

The *WWC Procedures and Standards Handbook* discusses the pilot standards for reviewing single-case design studies in Appendix E.