

REVIEW PROTOCOL FOR ADOLESCENT LITERACY INTERVENTIONS VERSION 4.0 (DECEMBER 2018)

This protocol guides the review of research that informs the What Works Clearinghouse (WWC) intervention reports in the Adolescent Literacy topic area. The protocol is used in conjunction with the [*WWC Procedures and Standards Handbooks \(version 4.0\)*](#).

PURPOSE STATEMENT

Literacy skills are critical to understanding information presented in written or oral format and communicating effectively with others. These skills are important to students' success in school and later in life, including improved individual health and economic outcomes, increased civic engagement, and enhanced community well-being.

This review focuses on literacy interventions designed for use with students in grades 4–12, with a primary focus on increasing English language reading or writing skills. The following research questions guide this review:

- Among interventions intended to provide literacy instruction, which ones improve literacy skills (alphabets, reading fluency, comprehension, writing, and general literacy achievement) among students in grades 4–12?
- Are some interventions more effective than others for developing certain types of literacy skills?
- Are some interventions more effective for certain types of students or when delivered in certain types of settings?

KEY DEFINITION

Literacy intervention. In this review, a literacy intervention is defined as a replicable instructional program (one that can be reproduced in another setting) that is delivered to students, includes clearly delineated literacy learning goals for students, and is designed to directly affect student English language reading or writing achievement. Furthermore, the intervention must be delivered in classrooms or academic settings (such as an afterschool program or summer school) with a primary focus on improving English literacy skills (such as English language arts classes).

ELIGIBILITY CRITERIA

Eligible Populations

Studies that examine populations of students who are on track to develop grade- (or age-) appropriate literacy skills, students who are at risk for literacy difficulties, and students who have learning disabilities are eligible for the Adolescent Literacy review. In particular, an eligible sample of students may include students classified as English learners or receiving special education services. However, the classroom or educational setting must not be focused solely on

providing instruction to students with disabilities or who are English learners. In this review, the following criteria are applied:

- **Location.** The intervention must be provided to students in an academic setting, including elementary schools, secondary schools, summer school programs, or home-schooling programs.
- **Grade range.** Studies with students in grades 4–12 at the time when they receive the intervention are eligible for review. Studies that include students who are older than 18 or younger than nine when they receive the intervention are included as long as the students are in grades 4–12. If authors do not provide the grade for study students, the review will use the age range of 9–18 to determine if the study is eligible.
- **Overlap with Beginning Literacy topic area.** Studies of reading interventions administered to students in grades K–3 are reviewed under the WWC Beginning Literacy topic area. When a study finding is based on a sample of students that spans both the Beginning Literacy and Adolescent Literacy topic areas and cannot be disaggregated by grade level, the Adolescent Literacy topic area will review the finding if any students receive the intervention in grade 5 or above (for example, a combined sample of students who received the intervention in grades 2–5). Any finding based on a sample that spans both topic areas, in which the oldest students who receive the intervention are in grade 4 (or lower), will be reviewed by the Beginning Literacy topic area (for example, a combined sample of students who received the intervention in grades 2–4).

Eligibility of Findings from Multiple Analyses in a Study

This review follows the guidance in the *WWC Procedures Handbook* (in Chapter IV: Reporting on Findings) regarding reporting on findings from subgroups, multiple analyses that use composite or subscale scores, or different time periods. In particular, the WWC reports findings from all eligible analyses that meet standards, split into main and supplemental findings. The rating of effectiveness for an intervention is based on the main findings. Other eligible findings that meet standards can be included in supplemental appendices to the intervention report. For each outcome measure, and among those findings that meet WWC design standards, the WWC uses the following criteria to designate one finding or set of findings as the main finding: (1) includes the full sample; (2) uses the most aggregate measure of the outcome measure (rather than individual subscales); and (3) is measured at a time specified by the protocol.

Under this review, findings for the subgroups listed in Exhibit 1 are eligible to be reported in supplemental appendices to the intervention report. Findings for other subgroups are not eligible for review (unless designated as the main finding based on the criteria above).

Exhibit 1. Subgroups of Interest to the Adolescent Literacy Topic Area

Characteristics of students	Characteristics of setting or context
<ul style="list-style-type: none">• Age or grade level• Gender• Economically disadvantaged (for example, free or reduced-price lunch eligibility, poverty status, or family background)• English learner status• Pre-intervention literacy achievement levels (for example, students reading or writing below grade level)• Race or ethnicity• Special education status	<ul style="list-style-type: none">• Economically disadvantaged school (for example, Title I status)• Location of the schools involved (for example, urban, suburban, rural)

Also for this review, measures obtained at the end of an intervention, as well as any time thereafter, are admissible. When reported, this review will classify immediate post-intervention findings (for example, outcomes administered after the third year of a 3-year intervention is completed) as main findings because these findings are more prevalent in the studies reviewed under this topic area. Measures occurring several months after the intervention may also provide strong evidence for an intervention's effectiveness. Additionally, intermediate outcome measures that reflect partial exposure to an intervention can also provide useful information about the intervention's effectiveness. Therefore, follow-up and intermediate findings, when available and appropriate, may be reported in supplemental appendices to the intervention report.

While the above rules will guide how main and supplemental findings are identified, review team leadership has discretion to identify main and supplemental findings after considering additional factors about the findings under review, such as the prevalence of findings across implementation levels and the design of the intervention.

Eligible Interventions

Only literacy interventions that are replicable (that can be reproduced in another setting) are eligible for review. The following characteristics of an intervention must be documented to reliably reproduce the intervention with different participants, in other settings, and at other times:

- Intervention description: skills being targeted, approach to enhancing the skill(s) (for example, 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 target population;
- Intervention duration and intensity; and
- Qualifications of individuals delivering or administering the intervention (for example, teachers or para-professionals).

In this review, the following types of interventions may be included:

- **Products (including curricula).** The review includes (a) comprehensive literacy curricula intended to serve as a school’s primary literacy instruction program; (b) literacy textbooks intended for whole-school or whole-classroom use; and (c) software (computer or web-based) applications designed to improve literacy skills and used with an entire class or individual students.
- **Programs.** The review includes (a) supplemental programs that are intended to enhance a whole-school or whole-classroom literacy instruction and (b) programs aimed at struggling readers and students who read behind their grade level, such as remedial curricula (for example, an afterschool tutoring program).
- **Practices and strategies.** The review includes classroom practices or strategies intended to address a specific literacy-related skill (for example, semantic mapping, vocabulary instruction, questioning, summarizing).
- **Policies.** This review includes schoolwide policies intended to improve literacy outcomes (such as a schoolwide literacy initiative).

An eligible literacy intervention may include professional development to support staff delivering the intervention. This topic area will describe in the intervention reports the professional development provided to staff delivering the intervention based on the information reported in the studies.

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

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

Eligible Research

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

- **Topic.** The intervention must focus on the effects of a literacy intervention on one or more measures of literacy, including alphabets, reading fluency, comprehension, writing, or general literacy achievement.
- **Time frame.** For new intervention reports, the study must have been released within the 20 years preceding the year of the review (for example, in 1999 or later for reviews occurring in 2019). For updated intervention reports, the study must have been released since the original intervention report’s literature search start date (for example, if the

original report used a 1989 literature search start date, the updated report will continue using the same date). Studies must be publicly available (accessible online or available through a publication, such as a journal) at the time of the original or updated literature search.

- **Sample.** The study sample must meet the requirements specified above in the “Eligible Populations” section at the time they receive the intervention. For example, while the students in the sample must be in grades 4–12 at the time that they receive intervention, their outcomes can be measured after students graduate from high school.
- **Language.** The study must be available in English to be included in the review. Also, studies examining literacy competencies in other languages will not be included in the review.
- **Location.** The study must include students in the United States, in its territories or tribal entities, at U.S. military bases overseas, or in other Organisation for Economic Co-operation and Development (OECD) member countries in which English is the primary or most commonly used language (that is, Australia, Canada, Ireland, New Zealand, or the United Kingdom).

Eligible Outcomes

This review includes outcomes in three reading domains (alphabeticity, reading fluency, and comprehension) and three writing domains (writing conventions, writing productivity, and writing quality). In addition, any outcomes that combine two or more of the six reading and writing domains are included in the general literacy achievement domain. For description of these seven domains and corresponding constructs, see Exhibit 2.

Exhibit 2. Outcome Domains and Constructs for the Adolescent Literacy Topic Area

Domain name	Construct name and description
<i>Alphabeticity</i>	<i>Letter identification</i> —knowledge of the names of the letters of the alphabet.
	<i>Phonemic awareness</i> —understanding that the sounds of spoken language (or phonemes) work together to make words, and phonemes can be substituted and rearranged to create different words. Phonemic awareness includes the ability to identify, think about, and work with the individual sounds in spoken words. Phonemic awareness helps students learn how to read and spell by allowing them to combine or blend the separate sounds of a word to say the word (for example, “/c/ /a/ /t/—cat”).

Domain name	Construct name and description
<p><i>Alphabetic</i> <i>(continued)</i></p>	<p><i>Phonics</i>^a—(a) knowing that there is a predictable relationship between phonemes (the sounds in spoken language) and graphemes (the letters used to represent the sounds in written language), (b) associating letters and letter combinations with sounds and blending them into syllables and words, and (c) understanding that this information can be used to read or decode words.</p> <p>Measures that assess spelling skills outside of the context of students’ writing samples (for example, by asking students to locate spelling mistakes, edit a piece of text written by another person, or write down words that are being dictated to them) are included as an acceptable phonics outcome. Otherwise, they are included in the writing conventions domain.</p> <hr/> <p><i>Phonological awareness</i>—knowledge of phonemes and of larger spoken units such as syllables and rhyming words. Tests of phonological awareness might require students to generate words that rhyme, to segment sentences into words, to segment polysyllabic words into syllables, or to delete syllables from words (for example, “what is cowboy without cow?”).</p> <hr/> <p><i>Print awareness</i>—knowledge or concepts about print, such as (a) print carries a message; (b) there are conventions of print, such as directionality (left to right, top to bottom), differences between letters and words, distinctions between upper- and lowercase, punctuation; and (c) books have some common characteristics (for example, author, title, front/back).</p>
<p><i>Reading fluency</i></p>	<p><i>Reading text accurately</i>, automatically, and with expression (including appropriate pausing, response to punctuation, and so on), while extracting meaning from it. This domain does not have constructs.</p>
<p><i>Comprehension</i></p>	<p><i>Vocabulary development</i>—understanding the meanings of words (receptive vocabulary) and using words appropriately (expressive vocabulary).</p>

Domain name	Construct name and description
<i>Comprehension</i> (continued)	<p data-bbox="509 243 1404 464">Reading comprehension—understanding the meaning of a passage. Reading comprehension depends on various underlying components including decoding (the ability to translate text into speech), knowledge of word meanings, fluency (the ability to read text accurately and automatically), and the ability to understand and interpret spoken language.</p> <p data-bbox="509 478 1404 737">Reading comprehension outcomes may include tests of students’ comprehension of passages from various content areas. For example, a test assessing students’ ability to read and answer questions about a social studies passage would be an acceptable outcome. However, content area knowledge tests that assess student’s preexisting understanding of the facts, theories, and other content related material are not eligible outcomes.</p>
<i>Writing conventions</i>	<p data-bbox="509 747 1404 968">Using rules of standard English language such as word usage, sentence structure, grammar, and language mechanics including capitalization, punctuation, or spelling. Standardized tests using multiple-choice formats that test a student’s knowledge of writing conventions (such as English language arts or written language subtests) may fall within this domain.</p> <p data-bbox="509 982 1404 1125">When spelling skills are assessed based on students’ writing samples, they are included in the writing conventions domain; otherwise, they are included in the alphabetics domain (phonics construct). This domain does not have constructs.</p>
<i>Writing productivity</i>	<p data-bbox="509 1136 1404 1396">Includes measures that focus solely on writing quantity such as counts of written words (including different words or content-specific words), sentences, ideas, or length of passages. For example, measures of writing fluency that count the number of words produced in a particular length of time or the number of content-specific words in students’ writing samples fall within this domain. This domain does not have constructs.</p>

Domain name	Construct name and description
<i>Writing quality</i>	<p>Writing effective, clear and well-organized text. Assessments of writing quality could focus on writing generally or on particular kinds of writing (such as narrative, exposition, or argument). They can also evaluate a single or multiple components of writing skills (such as complexity or variation in words or sentence structure used, quality or richness of ideas, use of appropriate genre elements, organization of ideas, elaboration of ideas, effectiveness of a story or argument, style or voice, and overall writing quality). For example, state writing assessments in which students write one or more essays under standardized conditions, and automated writing assessments (AWAs) that provide an estimate of overall writing quality fall within this domain.</p> <p>Writing quality outcomes could also include measures of writing conventions and productivity if they include an evaluation of text written by students and are combined with other aspects of writing quality discussed above. This domain does not have constructs.</p>
<i>General literacy achievement</i>	<p>Outcomes that fall in the general literacy achievement domain combine separate measures of two or more of the above domains by providing a summary score across domains, such as a “total score” on a standardized reading test. This domain does not have constructs.</p>

Notes: ^a The term *phonics* also refers to an instructional approach that focuses on the correspondence between sounds and symbols and is often used in contrast to whole language instructional approaches. For the purposes of defining eligible outcome measures, we use the term *phonics* as defined above, not as an instructional approach.

EVIDENCE STANDARDS

Eligible studies are assessed against WWC evidence standards, as described in the *WWC Procedures Handbook*, Section IV: Screening Studies and Section V: Reviewing Studies, as well as the *WWC Standards Handbook*.

Sample Attrition

The *WWC Standards Handbook* discusses the sample attrition standards used by the WWC in the following sections:

- Step 2 of the WWC review process for individual-level group design studies in Section II.A—“Sample Attrition: Is the combination of overall and differential attrition high?”
- Step 1 of the WWC review process for cluster-level group design studies in Section II.B—“Is the study a cluster RCT with low cluster-level attrition?”
- Section 3 of the WWC standards for reviewing complier average causal effect (CACE) estimates in Section II.D—“Calculating attrition when rating CACE estimates”
- Standard 2 of the WWC standards for reviewing regression discontinuity designs in Section III.C

This review uses the *optimistic* boundary for attrition. This boundary was based on the assumption that most attrition in studies of Adolescent Literacy was due to factors that were not strongly related to intervention status. For example, these factors may include family mobility or student absences on days that assessments are conducted. In the *WWC Standards Handbook*, Figure II.2 illustrates the attrition boundary, and Table II.1 reports attrition levels that define high and low attrition.

Joiners in Cluster Randomized Controlled Trials (RCTs)

The WWC defines a *joiner* as any student who enters a cluster (for example, a school or classroom) after the results of random assignment are known to any individual who could influence a student’s placement into a cluster (for example, parents, students, teachers, principals, or other school staff). The presence of joiners in an analytic sample has the potential to introduce bias into estimates of an intervention’s effectiveness.

In some cases, joiners who enter clusters relatively early in the study period have less potential to introduce bias than those who enter later. Therefore, the WWC sometimes differentiates between *early joiners* and *late joiners*. For this review protocol, we will consider a student to be an *early joiner* if they enter a cluster in the 6 weeks after the results of random assignment are known, or, in cases where random assignment occurred during the summer, 6 weeks after the start of the school year. That is, the *early period for joiners ends 6 weeks after the start of the school year if the results of random assignment were announced over the summer; otherwise, the early period ends 6 weeks after the results of random assignment were announced*. *Late joiners* are those that enter clusters after the end of the early joiner period.

This review protocol specifies the following rules:

- a. In cluster RCTs where the unit of assignment is a classroom or another group defined within a school (such as a group of classrooms or a small group of students within classrooms), ***all joiners pose a risk of bias***. This is because classroom rosters are often determined by school administrators who might assign students to classrooms based on knowledge of the intervention. Additionally, students or parents may influence their assignment to clusters (for example, classrooms) because they may have a specific preference for or against the intervention. Therefore, a study that includes at least one such joiner in the analytic sample ***does not limit the risk of bias from joiners***.
- b. In cluster RCTs where the unit of assignment is a school or a group of schools (such as a district), whether joiners pose a risk of bias depends on whether the intervention is expected to influence school enrollment or placement decisions.
 - If the intervention may affect enrollment or placement decisions (such as a highly publicized program for struggling readers), then ***all joiners pose a risk of bias***. A study of such an intervention that includes one or more joiners in the analytic sample ***does not limit the risk of bias from joiners***.
 - If it is unlikely that the intervention affects enrollment or placement decisions (such as a low-profile, schoolwide intervention or curriculum [for example, *Success for All*[®] or *Pearson Literature*[®]]), then ***only late joiners pose a risk of bias***. A study of such an intervention that includes at least one late joiner in the analytic sample ***does not limit the risk of bias from joiners***.

For the Adolescent Literacy topic area, the default assumption is that the interventions being examined with assignment at the school-level or higher are unlikely to affect enrollment or placement decisions; however, review team leadership has discretion to revise this assessment.

Additionally, the typical scenarios the WWC encounters in cluster RCTs for the Adolescent Literacy topic area are described above, but we cannot anticipate all scenarios. When an intervention and unit of assignment in a cluster RCT do not fall into a category described above, review team leadership has discretion to make a decision on which joiners pose a risk of bias.

Baseline Equivalence

If the study design is an RCT or regression discontinuity design (RDD) with high levels of attrition or a quasi-experimental design (QED), the study must satisfy the baseline equivalence requirement for the analytic intervention and comparison groups. The *WWC Standards Handbook* discusses how authors must satisfy the baseline equivalence requirement in:

- Step 3 of the WWC review process for individual-level group design studies in Section II.A—“Baseline Equivalence: Is equivalence established at baseline for the groups in the analytic sample?”
- Steps 4 and 7 of the WWC review process for cluster-level group design studies in Section II.B—“Does the study establish equivalence of individuals at baseline for

groups in the analytic sample?” and “Does the study establish equivalence of clusters at baseline for groups in the analytic sample?”, respectively.

- Section 5 of the WWC standards for reviewing complier average causal effect estimates in Section II.D—“Procedures for Rating CACE Estimates when Attrition is High”
- Standard 3 of the WWC standards for reviewing RDDs in Section III.C

1. Baseline equivalence of individuals

For studies that must satisfy baseline equivalence of individuals, including cluster-level assignment studies being reviewed for evidence of effects on individuals, the baseline equivalence requirement must be satisfied for the analytic intervention and comparison groups on a pre-intervention (baseline) measure of the outcome used in the analysis.

If a pre-intervention measure of the outcome used in the analysis is not available, then the following rules will apply:

- For outcomes in the reading domains (alphabetics, reading fluency, and comprehension), a pre-intervention measure from *any* of the reading outcome domains can be used to establish baseline equivalence;
- For outcomes in the writing domains (writing conventions, writing productivity, and writing quality), a pre-intervention measure from the *same domain* as the writing outcome can be used to establish baseline equivalence;
- For general literacy achievement outcomes, baseline equivalence rules follow the two rules above depending on whether the outcome measures reading or writing skills. If a general literacy outcome measure combines reading and writing skills, then equivalence must be established on *both* a pre-intervention reading measure (from any reading domain) and a pre-intervention writing measure in the same domain(s) as the writing skill(s) measured by the outcome.

For example, for reading fluency outcome, a pretest from the alphabetics domain can be used to establish baseline equivalence. However, for writing quality outcome only a writing quality pretest can be used to establish baseline equivalence. Finally, for a general literacy achievement that combines alphabetics and reading fluency skills, a pretest from any of the three reading domains can establish baseline equivalence but a writing assessment cannot.

For reading outcomes, the WWC will measure the baseline effect size difference between intervention and comparison groups for each pre-intervention measure reported in the study within the eligible reading outcome domains. If the analytic sample that must satisfy the baseline equivalence requirement has a baseline effect size greater than 0.25 standard deviations for *any* pre-intervention measure in one of the reading domains, then all findings for this analytic sample in the reading domains **do not meet WWC group design standards**. For writing outcomes, the WWC will measure the baseline effect size between intervention and comparison groups only for eligible pre-intervention writing measures within the same domain as the outcome measure.

If the analytic sample for a study finding that must satisfy the baseline equivalence requirement has a baseline effect size between 0.05 and 0.25 standard deviations (so that a statistical adjustment is required) for any pre-intervention measure within the domain, all outcome measures within that domain must adjust for that baseline difference. For example, if A, B, and C are available as pre- and post-intervention measures from the same outcome domains, and the pre-intervention difference for B requires statistical adjustment, then the impact analyses for A, B, and C must all adjust for B to be eligible to meet WWC standards with reservations. Otherwise, the findings in this domain are rated ***do not meet WWC group design standards***. When baseline equivalence for a finding is assessed based only on pre-intervention measures from outside the domain of the outcome measure, the team leadership, in consultation with content expert, has discretion to decide which measures must be included as statistical adjustments.

In addition to the pre-intervention measures that are required for satisfying the baseline equivalence requirement, other sample characteristics such as student age and grade level may be associated with the outcome. A large baseline difference on these characteristics could be evidence that the intervention and comparison groups are not sufficiently comparable for the purposes of the review. When differences in student age or grade level are larger than 0.25 standard deviations, the study finding will be rated ***does not meet WWC group design standards***. If the study does not report these characteristics, but describes a study sample that gives the reviewer reason to question the magnitude of the differences on these characteristics, the review team leadership has the discretion to conduct an author query to obtain information on the similarity of the groups on age and grade level.

2. Baseline equivalence of clusters

Assessing equivalence of clusters

In general, considerations for satisfying baseline equivalence of individuals also apply to satisfying baseline equivalence of clusters. In particular, baseline equivalence of clusters in the intervention and comparison groups must be satisfied by one of the same baseline measures described above for assessing baseline equivalence of individuals, and the same statistical adjustment requirements apply.

Acceptable samples for demonstrating baseline equivalence of clusters

For the Adolescent Literacy topic area, any of the following three sources can be used to satisfy the baseline equivalence requirement for the analytic sample of clusters (provided the data are representative of the individuals who were in the clusters at the time the baseline data were collected):

- a.** The analytic sample of individuals from any pre-intervention time period.
- b.** Individuals from the same cohort and within the same clusters as the individuals in the analytic sample. The baseline data may be obtained at the time that clusters were assigned to conditions, or during the year prior to when clusters were assigned to conditions.

- c. Individuals from the previous (adjacent) cohort, in the same grade, and within the same clusters, as individuals in the analytic sample.

If authors provide baseline information at multiple time periods, a reviewer should assess baseline equivalence using the information collected at the latest period before the start of the intervention. If authors provide baseline information for multiple samples, a reviewer should assess baseline equivalence using the sample listed first in the list above—that is, (a) should be used if available, then (b), and then (c). If authors provide baseline information for multiple samples across multiple time periods, the reviewer should consult review team leadership to determine which information to prioritize.

When a study examines the effectiveness of an intervention in multiple time periods, the sample used to satisfy baseline equivalence of clusters in the base period (for example, the school year after random assignment) also satisfies baseline equivalence of clusters in the later time periods (for example, 2 years after random assignment), so long as the outcome data are representative of the individuals in the clusters.

Outcome Measure Requirements

In this review, the requirements for outcome measures are more stringent than those specified in the *WWC Standards Handbook* (in Section IV.A: Outcome Requirements and Reporting). Specifically, this review requires a minimum of 0.60 (as measured by, for example, Cronbach’s alpha), for internal consistency to satisfy the reliability requirement for an outcome measure.

Statistical Adjustments

The *WWC Procedures Handbook* discusses the types of adjustments made by the WWC in Section VI: Reporting on Findings. For “mismatched” analysis (that is, when a study assigns units at the cluster level but conducts analysis at the individual level), this topic area uses the WWC default intra-class correlation coefficient for achievement outcomes of 0.20 for all eligible outcomes unless a study-reported intra-class correlation coefficient is available.

Eligible Study Designs

Studies that use group designs (RCTs and QEDs), RDDs, or single-case designs (SCDs) are eligible for review using the appropriate standards or pilot standards.

PROCEDURES FOR CONDUCTING THE LITERATURE SEARCH

The *WWC Procedures Handbook, version 4.0*, discusses the procedures for conducting a literature search in Section III: Identifying Relevant Literature and Appendix B: Policies for Searching Studies for Review. This review will use a quick literature search process to identify research on a limited number of interventions that may be of most interest to decision makers, rather than using a broad keyword search on the full topic area to identify interventions. In the first step of this process, content experts identify and recommend interventions with a large body of causal evidence likely to be of interest to decision makers. This review will identify additional interventions that may be the focus of WWC-reviewed studies that are not already the subject of up-to-date WWC intervention reports.

After identifying these interventions, the second step of the process is to conduct intervention-specific literature searches, using the intervention name, to identify all publications on each intervention. This review may refine the potential scope of this search by including additional search terms, as described in Appendix A.

In a third step, each citation gathered through this search process undergoes a screening process to determine whether the study meets the eligibility criteria established in the review protocol. This screening process is described in Chapter IV of the *WWC Procedures Handbook*. Finally, the interventions are prioritized for review based on the quantity and quality of eligible studies of the intervention. This prioritization process is described in Appendix A of the *WWC Procedures Handbook*.

Additional Sources

Literature reviews for this topic area involve searching the websites and electronic databases listed in Appendix B of the *WWC Procedures Handbook* as well as the following websites:

- American Educational Research Association (AERA)
- American Evaluation Association (AEA)
- American Federation of Teachers (AFT)
- Association for Public Policy Analysis and Management (APPAM)
- Center for Data-Driven Reform in Education (CDDRE) at Johns Hopkins University
- Center for Research in Educational Policy (CREP)
- Center on Education Policy
- Center on Instruction
- Consortium for Policy Research in Education (CPRE)
- Florida Center for Reading Research (FCRR)
- Iowa Reading Research Center
- Language and Literacy Research Center (LLRC) at the University of Maryland
- Literacy Development and Research Center (LDRC) at Old Dominion University
- Literacy Research Association
- Literacy Research Center and Clinic (LRCC) at the University of Wyoming
- Minnesota Center for Reading Research (MCRR)
- National Education Association (NEA)
- National Institute of Child Health and Human Development (NICHD)
- National Reading Panel
- Pacific Resources for Education and Learning (PREL)

- Public Policy Research Institute at Texas A&M University
- Society for Research on Educational Effectiveness (SREE)
- Southwest Educational Development Laboratory (SDEL)

**APPENDIX A. EXAMPLES OF ADDITIONAL SEARCH TERMS USED TO FOCUS
THE INTERVENTION-SPECIFIC LITERATURE SEARCH**

For some interventions, the literature search on the intervention name may result in many studies unrelated to the intervention. For example, this often occurs when the intervention name includes commonly used terms, such as “Success for All” or “Accelerated Reader.” The table below provides examples of the search terms that this topic area may use to focus the literature search for a selected intervention.

Category	Search terms	
Impact	<ul style="list-style-type: none"> • Achiev* • Affect* • Benefit* • Decreas* • Effect* • Efficac* • Gain 	<ul style="list-style-type: none"> • Growth • Impact* • Improv* • Increas* • Progress • Reduc* • Success*
Outcomes	<ul style="list-style-type: none"> • Alphabetic • Aural learning • Comprehension • Decoding • ELA • English Language Arts • Fluency • Language • Letter identification • Lexicography • Literacy • Phonemic • Phonetics 	<ul style="list-style-type: none"> • Phonics • Phonological • Print awareness • Print knowledge • Readability • Reading • Verbal development • Vocabulary • Vocalization • Writing • Word recognition