

Reading Mastery

No studies of *Reading Mastery* that fall within the scope of the Beginning Reading review protocol meet What Works Clearinghouse (WWC) evidence standards. The lack of studies meeting WWC evidence standards means that, at this time, the WWC is unable to draw any conclusions based on research about the effectiveness or ineffectiveness of *Reading Mastery* on beginning readers in grades K–3. Additional research is needed to determine the effectiveness or ineffectiveness of this intervention.

Program Description¹

Reading Mastery, one of several curriculum components that constitute the *Direct Instruction* program from SRA/McGraw-Hill, is designed to provide systematic instruction in reading to students in grades K–6. *Reading Mastery*, which can be used as an intervention program for struggling readers, as a supplement to a core reading program, or as a stand-alone reading program, is available in three versions:

1. *Reading Mastery Classic* (for grades pre-K–3) aims to help beginning readers identify letter sounds, segment words into sounds, blend sounds into words, develop vocabulary, and begin to learn comprehension strategies.
2. *Reading Mastery Plus* (for grades K–6) has a language arts focus with an emphasis on reading, writing, spelling, and language.
3. *Reading Mastery Signature Edition* (for grades K–5) includes three strands: (a) a Reading strand that addresses phonemic awareness, phonics, word analysis, fluency, vocabulary, comprehension, spelling, decoding, and word recognition skills; (b) an Oral Language/Language Arts strand that addresses oral language, communication, and writing skills; and (c) a Literature strand that is designed to provide students with opportunities to read a variety of texts and to develop their vocabulary.

During the implementation of *Reading Mastery*, students are grouped with other students at a similar reading level, based on program placement tests. The program includes a continuous monitoring component.

A typical 30- to 45-minute *Reading Mastery* lesson includes seven to nine short activities that encompass multiple strands of content, such as phonemic awareness, letter–sound correspondence, sounding out words, word recognition, vocabulary, oral reading fluency, or comprehension. The teaching routine repeated throughout the curriculum is composed of the following steps: modeling new content, providing guided practice, and implementing individual practice and application. Lesson scripts act as a guide for teachers. Signals and group responses are used to keep students involved and on task and to control lesson pacing. The program typically spans 1 academic year.

This review of *Reading Mastery* for Beginning Reading focuses on students in grades K–3.

Research²

The WWC identified 154 studies of *Reading Mastery* for beginning readers that were published or released between 1983 and 2012.

Thirty-one studies are within the scope of the Beginning Reading review protocol but do not meet WWC evidence standards.

- Thirteen studies used a quasi-experimental design that did not establish that the comparison group was comparable to the intervention group prior to the start of the intervention.
- Ten studies could not attribute the measures of the effects solely to *Reading Mastery* because the intervention was combined with another intervention, the effects were not reported separately for the intervention, or the intervention was not implemented as designed.
- Seven studies had only one unit assigned to the intervention condition or one unit assigned to the comparison condition.
- One study used a single-case design that did not have at least three attempts to demonstrate an intervention effect at three different points in time.

Seventy-six studies are out of the scope of the Beginning Reading review protocol because they have an ineligible study design.

- Sixty-one studies did not use a comparison group design, a regression discontinuity design, or a single-case design.
- Fifteen studies were literature reviews or meta-analyses.

Forty-seven studies are out of the scope of the Beginning Reading review protocol for reasons other than study design.

- Nineteen studies did not include students in grades K–3, as specified in the protocol.
- Eight studies included fewer than 50% general education students.
- Eight studies did not disaggregate findings for the age or grade range specified in the protocol.
- Seven studies did not examine the effectiveness of an intervention.
- Three studies did not include an outcome within a domain specified in the protocol.
- Two studies did not implement the intervention in a way that falls within the scope of the review because the intervention was bundled with other components.

References

Studies that do not meet WWC evidence standards

- Algozzine, B., Wang, C., White, R., Cooke, N., Marr, M. B., Algozzine, K., Helf, S. S., & Duran, G. Z. (2012). Effects of multi-tier academic and behavior instruction on difficult-to-teach students. *Exceptional Children, 79*(1), 45–64. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—the intervention was combined with another intervention.
- Ashworth, D. R. (1999). Effects of Direct Instruction and basal reading instruction programs on the reading achievement of second graders. *Reading Improvement, 35*(4), 150–156. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—there was only one unit of analysis in one or both conditions.
- Brent, G., Diobilda, N., & Gavin, F. (1986). Camden Direct Instruction project 1984-1985. *Urban Education, 21*(2), 138–148. The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.
- Carlson, C. D., & Francis, D. J. (2002). Increasing the reading achievement of at-risk children through Direct Instruction: Evaluation of the Rodeo Institute for Teacher Excellence (RITE). *Journal of Direct Instruction, 3*(1), 29–50. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—the intervention was combined with another intervention.
- Crowe, E. C., Connor, C. M., & Petscher, Y. (2009). Examining the core: Relations among reading curricula, poverty, and first through third grade reading achievement. *Journal of School Psychology, 47*, 187–214. The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.
- Foorman, B. R., Chen, D. T., Carlson, C., Moats, L., Francis, D. J., & Fletcher, J. M. (2003). The necessity of the alphabetic principle to phonemic awareness instruction. *Reading and Writing, 16*(4), 289–324. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—the effects are not reported separately for the intervention.
- Green, A. K. (2010). Comparing the efficacy of SRA Reading Mastery and guided reading on reading achievement in struggling readers. *Dissertation Abstracts International, 71*(11A), 3969. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—there was only one unit assigned to one or both conditions.
- Jones, C. D. (2002). Effects of Direct Instruction programs on the phonemic awareness abilities of kindergarten students. *Dissertation Abstracts International, 63*(03), 902A. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—the intervention was combined with another intervention.
- Kamps, D., Abbott, M., Greenwood, C., Arreaga-Mayer, C., Wills, H., Longstaff, J.,...Walton, C. (2007). Use of evidence-based, small-group reading instruction for English language learners in elementary grades: Secondary-tier intervention. *Learning Disability Quarterly, 30*(3), 153–168. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—the intervention was combined with another intervention.
- Kamps, D., Abbott, M., Greenwood, C., Wills, H., Veerkamp, M., & Kaufman, J. (2008). Effects of small-group reading instruction and curriculum differences for students most at risk in kindergarten. *Journal of Learning Disabilities, 41*(2), 101–114. The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.
- Kamps, D. M., & Greenwood, C. R. (2005). Formulating secondary-level reading interventions. *Journal of Learning Disabilities, 38*(6), 500–509. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—the intervention was combined with another intervention.

- League, M. B. (2001). The effect of the intensity of phonological awareness instruction on the acquisition of literacy skills. *Dissertation Abstracts International*, 62(10), 3299A. The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.
- Mac Iver, M. A., & Kemper, E. (2002). The impact of Direct Instruction on elementary students' reading achievement in an urban school district. *Journal of Education for Students Placed at Risk*, 7(2), 197–220. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—the intervention was not implemented as designed.
- McCollum, S., McNeese, M. N., Styron, R., & Lee, D. E. (2007). A school district comparison of reading achievement based on three reading programs. *Journal of At-Risk Issues*, 13(1), 1–6. The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.
- McIntyre, E., Rightmyer, E. C., & Petrosko, J. P. (2008). Scripted and non-scripted reading instructional models: Effects on the phonics and reading achievement of first-grade struggling readers. *Reading & Writing Quarterly: Overcoming Learning Difficulties*, 24(4), 377–407. The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.
- Neely, M. (1995). The multiple effects of whole language, precision teaching and Direct Instruction on first-grade story-reading. *Effective School Practices*, 14(4), 33–42. The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.
- O'Brien, D. M., & Ware, A. M. (2002). Implementing research-based reading programs in the Fort Worth independent school district. *Journal of Education for Students Placed at Risk*, 7(2), 167–195. The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.
- O'Connor, R. E., Harty, K. R., & Fulmer, D. (2005). Tiers of intervention in kindergarten through third grade. *Journal of Learning Disabilities*, 38(6), 532–538. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—the intervention was combined with another intervention.
- Ryder, R. J., Burton, J. L., & Silberg, A. (2006). Longitudinal study of Direct Instruction effects from first through third grades. *Journal of Educational Research*, 99(3), 180–191. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—there was only one unit assigned to one or both conditions.
- Ryder, R. J., Sekulski, J. L., & Silberg, A. (2003). *Results of Direct Instruction reading program evaluation longitudinal results: First through third grade 2000–2003*. Retrieved from: <http://www.uwm.edu> The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.
- SRA/McGraw-Hill. (2009). *A report on the effects of SRA/McGraw-Hill's Reading Mastery, Signature Edition: A response to intervention solution*. DeSoto, TX: Author. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—there was only one unit assigned to one or both conditions.
- Stockard, J. (2011). Increasing reading skills in rural areas: An analysis of three school districts. *Journal of Research in Rural Education*, 26(8). The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.

- Stockard, J., & Engelmann, K. (2010). The development of early academic success: The impact of Direct Instruction's Reading Mastery. *Journal of Behavior Assessment & Intervention in Children*, 1(1), 2–24. Study A. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—there was only one unit assigned to one or both conditions.
- Stockard, J., & Engelmann, K. (2010). The development of early academic success: The impact of Direct Instruction's Reading Mastery. *Journal of Behavior Assessment & Intervention in Children*, 1(1), 2–24. Study B. The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.
- Thames, D., Kazelskis, R., & Kazelskis, C. R. (2006, November). *Reading performance of elementary students: Results of a five-year longitudinal study of direct reading instruction*. Paper presented at the Annual Meeting of the Mid-South Educational Research Association, Birmingham, AL. The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.
- Thomson, B. (1991). Pilot study of the effectiveness of a Direct Instruction model (Reading Mastery Fast Cycle) as a supplement to a literature based delivery model (Houghton-Mifflin Integrated Reading Program) in two regular first grade classrooms. *Florida Educational Research Council Research Bulletin*, 23(2), 3–23. The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.
- Trout, A. L., Epstein, M. H., Mickelson, W. T., Nelson, J. R., & Lewis, L. M. (2003). Effects of a reading intervention for kindergarten students at risk for emotional disturbance and reading deficits. *Behavioral Disorders*, 28(3), 313–326. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—the intervention was combined with another intervention.
- Umbach, B., Darch, C., & Halpin, G. (1989). Teaching reading to low performing first graders in rural schools: A comparison of two instructional approaches. *Journal of Instructional Psychology*, 16(3), 112–121. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—the intervention was combined with another intervention.
- Wills, H., Kamps, D., Abbott, M., Bannister, H., & Kaufman, J. (2010). Classroom observations and effects of reading interventions for students at risk for emotional and behavioral disorders. *Behavioral Disorders*, 35(2), 103–119. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—there was only one unit assigned to one or both conditions.
- Wiltz, N., & Wilson, G. P. (2006). An inquiry into children's reading in one urban school using SRA Reading Mastery (Direct Instruction). *Journal of Literacy Research*, 37(4), 493–528. The study does not meet WWC evidence standards because the measures of effectiveness cannot be attributed solely to the intervention—there was only one unit assigned to one or both conditions.

Studies that do not meet WWC pilot single-case design standards

- Goss, C. L., & Brown-Chidsey, R. (2012). Tier 2 reading interventions: Comparison of Reading Mastery and Foundations Double Dose. *Preventing School Failure*, 56(1), 65–74. The study does not meet WWC evidence standards because it does not have at least three attempts to demonstrate an intervention effect at three different points in time.

Additional source:

- Goss, C. L. (2008). Tier II reading interventions: Research study. *Dissertation Abstracts International*, 70(03A), 63-797.

Studies that are ineligible for review using the Beginning Reading Evidence Review Protocol

- Airhart, K. M. (2005). *The effectiveness of Direct Instruction in reading compared to a state mandated language arts curriculum for ninth and tenth graders with specific learning disabilities* (Unpublished doctoral disserta-

- tion). Tennessee State University, Nashville. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- Asfendis, G. (2008). Phonemic awareness and early intervention: An evaluation of a pilot phonemic awareness program. *Dissertation Abstracts International*, 62. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Association for Supervision and Curriculum Development and the Council of Chief State School Officers. (2003). City Springs Elementary School, Baltimore, MD. In *Results with Reading Mastery* (pp. 14–15). New York: McGraw-Hill. The study is ineligible for review because it does not disaggregate findings for the age or grade range specified in the protocol.
- Association for Supervision and Curriculum Development and the Council of Chief State School Officers. (2003). Eshelman Avenue Elementary, Lomita, CA. In *Results with Reading Mastery* (pp. 16–17). New York: McGraw-Hill. The study is ineligible for review because it does not disaggregate findings for the age or grade range specified in the protocol.
- Association for Supervision and Curriculum Development and the Council of Chief State School Officers. (2003). Fort Worth Independent School District, Fort Worth, TX. In *Results with Reading Mastery* (pp. 4–5). New York: McGraw-Hill. The study is ineligible for review because it does not disaggregate findings for the age or grade range specified in the protocol.
- Association for Supervision and Curriculum Development and the Council of Chief State School Officers. (2003). Lebanon School District, Lebanon, PA. In *Results with Reading Mastery* (pp. 8–9). New York: McGraw-Hill. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- Association for Supervision and Curriculum Development and the Council of Chief State School Officers. (2003). Park Forest-Chicago Heights School District 163, Chicago, IL. In *Results with Reading Mastery* (pp. 10–11). New York: McGraw-Hill. The study is ineligible for review because it does not disaggregate findings for the age or grade range specified in the protocol.
- Association for Supervision and Curriculum Development and the Council of Chief State School Officers. (2003). Portland Elementary School, Portland, OR. In *Results with Reading Mastery* (pp. 2–3). New York: McGraw-Hill. The study is ineligible for review because it does not disaggregate findings for the age or grade range specified in the protocol.
- Association for Supervision and Curriculum Development and the Council of Chief State School Officers. (2003). Roland Park Elementary/Middle School, Baltimore, MD. In *Results with Reading Mastery* (pp. 12–13). New York: McGraw-Hill. The study is ineligible for review because it does not disaggregate findings for the age or grade range specified in the protocol.
- Association for Supervision and Curriculum Development and the Council of Chief State School Officers. (2003). Wilson Primary School, Phoenix, AZ. In *Results with Reading Mastery* (pp. 6–7). New York: McGraw-Hill. The study is ineligible for review because it does not disaggregate findings for the age or grade range specified in the protocol.
- Batchelder, H. L. W. (2008). *An investigation of the efficacy of the text talk strategy on pre-school students' vocabulary acquisition*. Retrieved from <http://purl.fcla.edu> The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- Bateman, B. (1991). Teaching word recognition to slow-learning children. *Journal of Reading, Writing, and Learning Disabilities International*, 7(1), 1–16. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.
- Borges, J. (2009). *Reciprocal teaching strategies in context: Implications for sixth grade humanities*. New York: Bank Street College of Education. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.

- Butler, P. A. (2003). Achievement outcomes in Baltimore City Schools. *Journal of Education for Students Placed at Risk*, 8, 33–60. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Chamberlain, L. A. (1987). Using DI in a Victoria, B.C. resource room. *ADI News*, 7(1), 7–8. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Collier, P. R. (2008). The impact of literacy coaching on teacher fidelity and students with learning disabilities' reading achievement. *Dissertation Abstracts International*, 70(02A), 126–514. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- Comprehensive School Reform Quality Center. (2006). *CSRQ center report on elementary school CSR models*. Washington, DC: Comprehensive School Reform Quality Center, American Institutes for Research. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.
- Cooke, N. L., Gibbs, S. L., Campbel, M. L., & Shalvis, S. L. (2004). A comparison of Reading Mastery Fast Cycle and Horizons Fast Track A–B on the reading achievement of students with mild disabilities. *Journal of Direct Instruction*, 4(2), 139–151. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample includes less than 50% general education students.
- Darch, C., & Kameenui, E. (1987). Teaching critical reading skills to learning disabled children. *Learning Disability Quarterly*, 10, 82–92. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- De La Cruz, C. F. (2009). *A program evaluation study of a literacy initiative for students with moderate to severe disabilities*. Retrieved from <http://purl.fcla.edu> The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Elias, E. I. (2009). The lived experiences of six first-grade teachers using Reading Mastery Plus curriculum in high poverty schools. *Dissertation Abstracts International*, 70(7A), 182–2440. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Eppley, K. (2011). Reading Mastery as pedagogy of erasure. *Journal of Research in Rural Education*, 26, 1–5. The study is ineligible for review because it does not examine the effectiveness of an intervention.
- Foorman, B., & Al Otaiba, S. (2009). How children learn to read: Current issues and new directions in the integration of cognition, neurobiology and genetics of reading and dyslexia research and practice. In K. Pugh & P. McCarrle (Eds.), *Reading remediation: State of the art* (pp. 257–274). New York: Psychology Press. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.
- Foorman, B. R., Fletcher, J. M., & Francis, D. J. (2004). Early reading assessment. In W. M. Evers & H. J. Walberg (Eds.), *Testing student learning, evaluating teaching effectiveness* (pp. 81–125). Stanford, CA: Hoover Institution Press. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.
- Foorman, B. R., Schatschneider, C., Eakin, M. N., Fletcher, J. M., Moats, L. C., & Francis, D. J. (2006). The impact of instructional practices in grades 1 and 2 on reading and spelling achievement in high poverty schools. *Contemporary Educational Psychology*, 31(1), 1–29. The study is ineligible for review because it does not examine the effectiveness of an intervention.
- Fredrick, L. D., Keel, M. C., & Neel, J. H. (2002). Making the most of instructional time: Teaching reading at an accelerated rate to students at risk. *Journal of Direct Instruction*, 2(1), 57–63. The study is ineligible for review because it does not use a comparison group design or a single-case design.

- Frijters, J. C., Lovett, M. W., Steinbach, K. A., Wolf, M., Sevcik, R. A., & Morris, R. D. (2011). Neurocognitive predictors of reading outcomes for children with reading disabilities. *Journal of Learning Disabilities, 44*(2), 150–166. The study is ineligible for review because it does not examine the effectiveness of an intervention.
- Fulmer, S. M., & Frijters, J. C. (2011). Motivation during an excessively challenging reading task: The buffering role of relative topic interest. *Journal of Experimental Education, 79*(2), 185–208. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- Graves, A. W., Duesbery, L., Pyle, N. B., Brandon, R. R., & McIntosh, A. S. (2011). Two studies of Tier II literacy development: Throwing sixth graders a lifeline. *The Elementary School Journal, 111*(4), 641–661. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- Greaney, K., & Arrow, A. (2012). Phonological-based assessment and teaching within a first year reading program in New Zealand. *Australian Journal of Language & Literacy, 35*(1), 9–32. The study is ineligible for review because it does not examine the effectiveness of an intervention.
- Gunn, B., Smolkowski, K., Biglan, A., & Black, C. (2002). Supplemental instruction in decoding skills for Hispanic and non-Hispanic students in early elementary school: A follow-up. *Journal of Special Education, 36*(2), 69–79. The study is ineligible for review because it does not implement the intervention in a way that falls within the scope of the review—the intervention is bundled with other components.
- Additional source:**
- Gunn, B., Smolkowski, K., Biglan, A., Black, C., & Blair, J. (2005). Fostering the development of reading skill through supplemental instruction: Results for Hispanic and non-Hispanic students. *Journal of Special Education, 39*(2), 66–86.
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. New York: Routledge. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.
- Herrera, J. A., Logan, C. H., Cooker, P. G., Morris, D. P., & Lyman, D. E. (1997). Phonological awareness and phonetic-graphic conversion: A study of the effects of two intervention paradigms with learning disabled children. Learning disability or learning difference? *Reading Improvement, 34*(2), 71–89. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample includes less than 50% general education students.
- Humphries, T., Neufeld, M., Johnson, C., Engels, K., & McKay, R. (2005). A pilot study of the effect of Direct Instruction programming on the academic performance of students with intractable epilepsy. *Epilepsy & Behavior, 6*(3), 405–412. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Intensive, tailored tuition raise literacy. (2012). *Children and Young People Now, 2*(15), 32–33. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Jordan, N. L. (2005). Basal readers and reading as socialization: What are children learning? *Language Arts, 82*(3), 204–213. The study is ineligible for review because it does not include an outcome within a domain specified in the protocol.
- Joseph, B. L. (2000). Teacher expectations of low-SES preschool and elementary children: Implications of a research-validated instructional intervention for curriculum policy and school reform. *Dissertation Abstracts International, 65*(01), 35A. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Joseph, L. M., & Schisler, R. (2009). Should adolescents go back to the basics? A review of teaching word reading skills to middle and high school students. *Remedial and Special Education, 30*(3), 131–147. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.

- Kaiser, S., Palumbo, K., Bialozor, R. C., & McLaughlin, T. F. (1989). The effects of Direct Instruction with rural remedial education students: A brief report. *Reading Improvement*, 26(1), 88–93. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- Kanfush, P. M., III. (2010). Use of Direct Instruction to teach reading to students with significant cognitive impairments: Student outcomes and teacher perceptions. *Dissertation Abstracts International*, 71(12A), 4355. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample includes less than 50% general education students.
- Keafer, K. A. (2008). Effects of National Institute for Learning Development educational therapy for students with learning difficulties. *Dissertation Abstracts International*, 69(06A), 123-222. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Kubina, R. M., Jr., Commons, M. L., & Heckard, B. (2009). Using precision teaching with Direct Instruction in a summer school program. *Journal of Direct Instruction*, 9(1), 1–12. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Kuder, S. J. (1990). Effectiveness of the DISTAR reading program for children with learning disabilities. *Journal of Learning Disabilities*, 23(1). The study is ineligible for review because it does not use a sample aligned with the protocol—the sample includes less than 50% general education students.
- Kuder, S. J. (1991). Language abilities and progress in a Direct Instruction reading program for students with learning disabilities. *Journal of Learning Disabilities*, 24(2). The study is ineligible for review because it does not disaggregate findings for the age or grade range specified in the protocol.
- LeClair, C. M. (2011). *Determining the longitudinal effects of acculturation orientation on elementary-aged Spanish-speaking English language learner students' reading progress* (Unpublished doctoral dissertation). University of Nebraska, Lincoln. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample includes less than 50% general education students.
- Lehr, F., & Osborn, J. (2012). *Reading, language, and literacy*. Retrieved from <http://www.ebilib.com> The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.
- Lovett, M. W., Lacerenza, L., De Palma, M., & Frijters, J. C. (2012). Evaluating the efficacy of remediation for struggling readers in high school. *Journal of Learning Disabilities*, 45(2), 151–169. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- Marchand-Martella, N., Kinder, D., & Kubina, R. (2005). Special education and Direct Instruction: An effective combination. *Journal of Direct Instruction* 5, 1–36. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.
- Marchand-Martella, N. E., Martella, R. C., Kolts, R. L., Mitchell, D., & Mitchell, C. (2006). Effects of a three-tier strategic model of intensifying instruction using a research-based core reading program in grades K–3. *Journal of Direct Instruction*, 6(1), 49–72. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Marchand-Martella, N. E., Ruby, S. F., & Martella, R. C. (2007). Intensifying reading instruction for students within a three-tier model: Standard-protocol and problem solving approaches within a response-to-intervention (RTI) system. *TEACHING Exceptional Children Plus*, 3(5). The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Massar, E. M., Widener University, & School of Human Service Professions. (2009). *A case study using the Corrective Reading program in a junior/senior high remedial class* (Unpublished doctoral dissertation). Widener University, Chester, PA. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.

- Mathes, P. G., & Proctor, T. J. (1988). Direct Instruction for teaching “hard to teach” students. *Reading Improvement, 25*(2), 92–97. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.
- Nanda, A. O., & Fredrick, L. D. (2007). The effects of combining repeated reading with “Reading Mastery” on first graders’ oral reading fluency. *Journal of Direct Instruction, 7*(1), 17–27. The study is ineligible for review because it does not implement the intervention in a way that falls within the scope of the review—the intervention is bundled with other components.
- Palacios, N. (2009). Immigration, child development, and early education in the twenty-first century. *Dissertation Abstracts International, 70*(12A), 201-4568. The study is ineligible for review because it does not examine the effectiveness of an intervention.
- Prager, A. J. (2008). *A comparison of linear versus spiral multiple exemplar instruction on derived abstracted textual responses of preschool children* (Unpublished doctoral dissertation). Columbia University, New York. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- Ralston, N. C., Benner, G. J., Nelson, J. R., & Caniglia, C. (2009). The effects of the “language arts” strand of the “Reading Mastery signature series” on the reading and language skills of English language learners. *Journal of Direct Instruction, 9*(1), 47–55. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample includes less than 50% general education students.
- Riepl, J. H., Marchand-Martella, N., & Martella, R. C. (2008). The effects of “Reading Mastery Plus” on the beginning reading skills of students with intellectual and developmental disabilities. *Journal of Direct Instruction, 8*(1), 29–39. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample includes less than 50% general education students.
- Schieffer, C., Marchand-Martella, N., Martella, R., & Simonsen, F. (n.d.). *The research base for Reading Mastery*. DeSoto, TX: The McGraw-Hill Companies. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.
- Shelton, N. R. (2010). Program fidelity in two “Reading Mastery” classrooms: A view from the inside. *Literacy Research and Instruction, 49*(4), 315–333. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Shippen, M. E., Houchins, D. E., Calhoun, M. B., Furlow, C. F., & Sartor, D. L. (2006). The effects of comprehensive school reform models in reading for urban middle school students with disabilities. *Remedial and Special Education, 27*(6), 322–328. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- Simmons, D. C., Coyne, M. D., Kwok, O., McDonagh, S., Harn, B. A., & Kame’enui, E. J. (2008). Indexing response to intervention. *Journal of Learning Disabilities, 41*(2), 158–173. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Slavin, R. E., Lake, C., Chambers, B., Cheung, A., & Davis, S. (2009). Effective reading programs for the elementary grades: A best-evidence synthesis. *Review of Educational Research, 79*(4), 1391–1466. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.
- Slavin, R. E., Lake, C., Cheung, A., & Davis, S. (2009). *Beyond the basics: Effective reading programs for the upper elementary grades*. Baltimore, MD: Center for Data-Driven Reform in Education, Johns Hopkins University. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.

- Smolkowski, K., Biglan, A., Barrera, M., Taylor, T., Black, C., & Blair, J. (2005). Schools and Homes in Partnership (SHIP): Long-term effects of a preventive intervention focused on social behavior and reading skill in early elementary school. *Prevention Science: The Official Journal of the Society for Prevention Research*, 6(2), 113–125. The study is ineligible for review because it does not include an outcome within a domain specified in the protocol.
- SRA/McGraw-Hill. (n.d.). *Anchorage school's diverse population flourishes with Direct Instruction*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (n.d.). *Combination of Open Court reading and Direct Instruction equal consistently high reading scores*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (n.d.). *Commitment to Direct Instruction increases reading scores at Cleveland school*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (n.d.). *Direct Instruction drives success for bilingual students at Houston elementary school*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (n.d.). *ELL and struggling students at Wisconsin district build literacy skills with Direct Instruction*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (n.d.). *High percentage of charter school's students testing above national average*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (n.d.). *Houston blue ribbon school's deaf population achieves AYP with Direct Instruction*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (n.d.). *Modesto elementary school advances from underperforming to distinguished with Direct Instruction*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (n.d.). *Nebraska Reading First school reaches states highest scores with SRA reading programs*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (n.d.). *Open Court reading and Reading Mastery combine to create successful elementary reading program*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (n.d.). *Pennsylvania SD uses Horizons to give at-risk readers foundations for success*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (n.d.). *Phoenix inner-city students strive toward national reading average*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (n.d.). *Results with Reading Mastery*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (n.d.). *Seattle school boosts reading scores with Reading Mastery curriculum*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.

- SRA/McGraw-Hill. (n.d.). *Special education students at California elementary school achieve AYP with Direct Instruction*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (n.d.). *Success begins early at Alaskan elementary school*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (n.d.). *Wisconsin teachers use Horizons to customize reading lessons*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2005). *All grade 3 students in two Monroe, Wisconsin elementary schools score proficient or advanced in reading*. Retrieved from <http://www.mheresearch.com> The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2005). *Barren County elementary schools post highest reading scores ever*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2005). *California blue ribbon school closes achievement gap with Reading Mastery*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2005). *Delaware charter school students maintain high reading scores*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2005). *Direct Instruction helps Kentucky blue ribbon school attain record reading scores*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2005). *Florida elementary students master reading in preparation for junior high*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- SRA/McGraw-Hill. (2005). *Florida school raises reading scores with Direct Instruction*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2005). *Miami elementary school boosts FCAT scores with Reading Mastery*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2005). *Milwaukee elementary nearly doubles reading scores*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2005). *Oregon Reading First project uses Reading Mastery Plus as core reading program*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2005). *Phoenix inner-city students strive toward national reading average*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2005). *Reading Mastery helps Florida students advance two grade levels in reading*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.

- SRA/McGraw-Hill. (2005). *Reading Mastery Plus helps Colorado school achieve AYP for first time*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2005) *Test scores transform troubled school into national model*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- SRA/McGraw-Hill. (2005). *Washington elementary students excel on WASL, ITBS with Reading Mastery Plus*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2006). *Cleveland school keeps Reading Mastery as curriculum core*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2006). *DIBELS scores advance to grade level with Reading Mastery*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2006). *Exceptional education and regular education students excel with Direct Instruction*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2006). *Florida school moves from D grade to A with Reading Mastery*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2006). *Native American school uses Reading First grant to implement Direct Instruction*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2006). *Reading Mastery, Corrective Reading help students with disabilities achieve significant academic growth*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2006). *Reading proficiency more than doubles among Putnam County special education students*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2006). *Struggling Milwaukee readers make strong gains with Direct Instruction*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- SRA/McGraw-Hill. (2006). *Utah school district maintains high language arts scores with Direct Instruction*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2007). *Direct Instruction reduces special education referrals in Louisiana school district by half*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2007). *Low-performing Kentucky school on its way to high-performing with Reading Mastery*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2007). *Reading Mastery helps special education students meet state reading standards*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.

- SRA/McGraw-Hill. (2007). *Reading scores rise at Alabama elementary school with Reading Mastery Plus*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2007). *SRA/McGraw-Hill's reading programs bring increases in Baltimore's scores*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- SRA/McGraw-Hill. (2007). *Title I schools in North Carolina district meet all-state reading targets with Direct Instruction*. Columbus, OH: The McGraw-Hill Companies. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Stockard, J. (2008). *The long-term impact of NIFDI-supported implementation of direct instruction on reading achievement: An analysis of fifth graders in the Baltimore City Public School System*. Eugene, OR: National Institute for Direct Instruction. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- Stockard, J. (2010). *Fourth graders growth in reading fluency: A pretest-posttest randomized control study comparing Reading Mastery and Scott Foresman Basal Reading Program*. Eugene, OR: National Institute for Direct Instruction. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- Stockard, J. (2010). *Merging the accountability and scientific research requirements of the No Child Left Behind act: Using cohort control groups*. Eugene, OR: National Institute for Direct Instruction. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.
- Stockard, J. (2010). *The impact of Reading Mastery in kindergarten on reading achievement through the primary grades: A cohort control group design*. Eugene, OR: National Institute for Direct Instruction. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Sturtz, T. I. (2009). *Preservice literacy instruction and the benefits of Direct Instruction*. Charleston, SC: BiblioBazaar. The study is ineligible for review because it does not examine the effectiveness of an intervention.
- Torgesen, J. K. (2002). Lessons learned from intervention research in reading: A way to go before we rest. *Learning and Teaching Reading*, 89–103. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.
- Van Norman, R. K., & Wood, C. L. (2008). Effects of prerecorded sight words on the accuracy of tutor feedback. *Remedial and Special Education*, 29(2), 96–107. The study is ineligible for review because it does not include an outcome within a domain specified in the protocol.
- Viel-Ruma, K. A. (2008). The effects of Direct Instruction in writing on English speakers and English language learners with disabilities. *Dissertation Abstracts International*, 69(07A), 149-2672. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample includes less than 50% general education students.
- Watkins, T. B. (2008). A comparative analysis of the effectiveness of Direct Instruction reading on African American, Caucasian, and Hispanic students. *Dissertation Abstracts International*, 69(03A), 104-923. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Wilson, P., Martens, P., & Arya, P. (2005). Accountability for reading and readers: What the numbers don't tell. *Reading Teacher*, 58(7), 622–631. The study is ineligible for review because it does not examine the effectiveness of an intervention.
- Wyse, D. (2012). *Literacy teaching and learning*. London: SAGE Publications. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.

Zayac, R. M. (2008). Direct Instruction reading: Effects of the Reading Mastery Plus-Level K curriculum on pre-school children with developmental delays. *Dissertation Abstracts International*, 69(10B), 226-6458. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.

Additional source:

Zayac, R. M., & Johnston, J. M. (2008). *Direct Instruction reading effects of the Reading Mastery Plus-Level K program on preschool children with developmental delays*. Retrieved from <http://repo.lib.auburn.edu>

Endnotes

* On March 3, 2014, the WWC modified this report in response to an independent review by the quality review team. Based on the review, the WWC removed 11 studies and one duplicate citation from the reference list and updated the number of studies in the Research section. The studies were removed because they did not assess the effectiveness of *Reading Mastery*. This changes the total number of identified *Reading Mastery* studies from 166 to 154 in the Research section and References. The WWC has not added studies to the evidence base, updated the literature search, or changed any study rating since the November 2013 release of this report.

¹ The descriptive information for this program was obtained from a publicly available source: the WWC *Reading Mastery* intervention report for adolescent readers (<http://ies.ed.gov/ncee/wwc/interventionreport.aspx?sid=418>). The WWC requests developers to review the program description sections for accuracy from their perspective. The program description was provided to the developer in September 2012; however, the WWC received no response. Further verification of the accuracy of the descriptive information for this program is beyond the scope of this review. The literature search reflects documents publicly available by December 2012.

² This report has been updated to include reviews of 95 studies that have been reviewed since the previous intervention report was released in August 2008. Of these additional studies, 78 were not within the scope of the Beginning Reading review protocol, and 17 were within the scope of the protocol but did not meet evidence standards. A complete list and disposition of all studies reviewed are provided in the references. The studies in this report were reviewed using the Evidence Standards from the WWC Procedures and Standards Handbook (version 2.1), along with those described in the Beginning Reading review protocol (version 2.1). The evidence presented in this report is based on available research. Findings and conclusions may change as new research becomes available.

Recommended Citation

U.S. Department of Education, Institute of Education Sciences, What Works Clearinghouse (2013, November).
Beginning Reading intervention report: Reading Mastery. Retrieved from <http://whatworks.ed.gov>

Glossary of Terms

Attrition	Attrition occurs when an outcome variable is not available for all participants initially assigned to the intervention and comparison groups. The WWC considers the total attrition rate and the difference in attrition rates across groups within a study.
Clustering adjustment	If intervention assignment is made at a cluster level and the analysis is conducted at the student level, the WWC will adjust the statistical significance to account for this mismatch, if necessary.
Confounding factor	A confounding factor is a component of a study that is completely aligned with one of the study conditions, making it impossible to separate how much of the observed effect was due to the intervention and how much was due to the factor.
Design	The design of a study is the method by which intervention and comparison groups were assigned.
Domain	A domain is a group of closely related outcomes.
Effect size	The effect size is a measure of the magnitude of an effect. The WWC uses a standardized measure to facilitate comparisons across studies and outcomes.
Eligibility	A study is eligible for review and inclusion in this report if it falls within the scope of the review protocol and uses either an experimental or matched comparison group design.
Equivalence	A demonstration that the analysis sample groups are similar on observed characteristics defined in the review area protocol.
Extent of evidence	An indication of how much evidence supports the findings. The criteria for the extent of evidence levels are given in the WWC Procedures and Standards Handbook (version 2.1).
Improvement index	Along a percentile distribution of students, the improvement index represents the gain or loss of the average student due to the intervention. As the average student starts at the 50th percentile, the measure ranges from -50 to +50.
Multiple comparison adjustment	When a study includes multiple outcomes or comparison groups, the WWC will adjust the statistical significance to account for the multiple comparisons, if necessary.
Quasi-experimental design (QED)	A quasi-experimental design (QED) is a research design in which subjects are assigned to intervention and comparison groups through a process that is not random.
Randomized controlled trial (RCT)	A randomized controlled trial (RCT) is an experiment in which investigators randomly assign eligible participants into intervention and comparison groups.
Rating of effectiveness	The WWC rates the effects of an intervention in each domain based on the quality of the research design and the magnitude, statistical significance, and consistency in findings. The criteria for the ratings of effectiveness are given in the WWC Procedures and Standards Handbook (version 2.1).
Single-case design	A research approach in which an outcome variable is measured repeatedly within and across different conditions that are defined by the presence or absence of an intervention.
Standard deviation	The standard deviation of a measure shows how much variation exists across observations in the sample. A low standard deviation indicates that the observations in the sample tend to be very close to the mean; a high standard deviation indicates that the observations in the sample tend to be spread out over a large range of values.
Statistical significance	Statistical significance is the probability that the difference between groups is a result of chance rather than a real difference between the groups. The WWC labels a finding statistically significant if the likelihood that the difference is due to chance is less than 5% ($p < 0.05$).
Substantively important	A substantively important finding is one that has an effect size of 0.25 or greater, regardless of statistical significance.

Please see the [WWC Procedures and Standards Handbook \(version 2.1\)](#) for additional details.