

Reading comprehension strategies

Very high impact for very low cost based on extensive evidence

Reading comprehension strategies focus on the learners' understanding of written text.

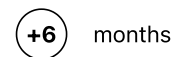
Implementation cost



Evidence strength



Impact (months)



Subject breakdown

reading: 135
science: 5
toolkit: 140

School phase breakdown

primary: 77
secondary: 61
toolkit: 140

Technical Appendix

The criteria used to judge the inclusion of studies in the Toolkit are:







- The population sampled involved early years and school age learners from 3-18 learning in their first language.
- The intervention or approach being tested was educational in nature, including named or clearly defined programmes and recognisable approaches classifiable according to the Toolkit strand definitions (e.g. peer tutoring or small group teaching). The intervention or approach is undertaken in a normal educational setting or environment for the learners involved, such as a nursery or school or a typical setting (e.g. an outdoor field centre or museum).
- A valid comparison was made between those receiving the educational intervention or approach and those not receiving it.
- Outcomes include the assessment of educational or cognitive achievement which reports quantitative results from testing of attainment or learning outcomes, such as by standardised tests or other appropriate curriculum assessments or school examinations or appropriate cognitive measures.
- The study design provided a quantitative estimate of the impact of the intervention or approach on the educational attainment of the sample, calculated or estimated in the form of an effect size (standardised mean difference) based on a counterfactual comparison.










Standardised mean differences and confidence intervals for the most appropriate estimates of the impact of the intervention or approach for the Toolkit were extracted from each included study, along with other study variables. These effect sizes were further synthesised into a single pooled effect using a random effects meta-analysis adopting a restricted maximum likelihood (REML) estimation methods. For the full details of the methodology see the [Protocol and Analysis Plan \(https://educationendowmentfoundation.org.uk/public/files/Toolkit/EEF_Evidence_Database_Protocol_and_Analysis_Plan_June2019.pdf\)](https://educationendowmentfoundation.org.uk/public/files/Toolkit/EEF_Evidence_Database_Protocol_and_Analysis_Plan_June2019.pdf).

References (140)

The forest plot below is a graphical representation of the results of all included studies in this Toolkit strand. It shows the effect size and confidence interval of each study, and whether the particular intervention in that study was more or less effective than standard practice or other alternative interventions that the study looked at.

Studies that show an effect size result on the right-hand side of the red vertical red indicate that the particular intervention studied was more effective than standard practice. Studies that show an effect size on the left-hand side of the red vertical indicate that the particular intervention studied was less effective than standard practice.

Author	Title	Effect Size	Effect Size (Graph)
Gajria (1992)	The Effects of Summarization Instruction on Text Comprehension of Students with Learning Disabilities (<i>Exceptional Children</i>)	Effect Size: 5.976 LCI: 4.202 UCI: 7.749 Weight: 0.205 Standard error: 0.905	
Bakken (1995)	Reading comprehension of expository science material and students with learning disabilities: A comparison of strategies (<i>NA</i>)	Effect Size: 2.222 LCI: 1.372 UCI: 3.072 Weight: 0.523 Standard error: 0.434	
Woodward (1991)	An investigation of the efficacy of Paris "Reading and Thinking Strategies" on the reading comprehension and metacognition in reading in learning disabled students (<i>NA</i>)	Effect Size: 2.101 LCI: 1.27 UCI: 2.933 Weight: 0.534 Standard error: 0.424	
Morrow (1984) RC	Reading stories to young children: Effects of story structure and traditional questioning strategies on comprehension (<i>Journal of Reading Behavior</i>)	Effect Size: 1.868 LCI: 1.434 UCI: 2.303 Weight: 0.794 Standard error: 0.222	
Jitendra (2000)	Enhancing main idea comprehension for students with learning problems: The role of a summarization strategy and self-monitoring instruction (<i>Journal of Special Education</i>)	Effect Size: 1.775 LCI: 0.967 UCI: 2.583 Weight: 0.547 Standard error: 0.412	
Salomon (1989)	The Computer as a Zone of Proximal Development: Internalizing Reading-Related Metacognitions From a Reading Partner (<i>Journal of Educational Psychology</i>)	Effect Size: 1.73 LCI: 1.066 UCI: 2.394 Weight: 0.638 Standard error: 0.339	

Author	Title	Effect Size	Effect Size (Graph)
Anders (1984)	The effect of semantic feature analysis on the reading comprehension of learning disabled students <i>(Changing Perspectives on Reading/Language Processing and Instruction)</i>	Effect Size: 1.662 LCI: 1.079 UCI: 2.244 Weight: 0.693 Standard error: 0.297	
Bos (1989)	The effects of an interactive instructional strategy for enhancing reading comprehension and content area learning for students with learning disabilities <i>(Journal of Learning Disabilities)</i>	Effect Size: 1.635 LCI: 0.995 UCI: 2.276 Weight: 0.654 Standard error: 0.327	
Bottomley (1993) 1_1	The effects of two procedures for teaching strategic reading on fourth-grade students' reading comprehension: Transactional strategies instruction and reciprocal teaching <i>(NA)</i>	Effect Size: 1.633 LCI: 0.125 UCI: 3.14 Weight: 0.263 Standard error: 0.769	
Lovett (1996)	Text comprehension training for disabled readers: An evaluation of reciprocal teaching and text analysis training programs <i>(Brain and Language)</i>	Effect Size: 1.569 LCI: 0.734 UCI: 2.403 Weight: 0.532 Standard error: 0.426	
Palincsar (1984)	Reciprocal Teaching of Comprehension-Fostering and Comprehension-Monitoring Activities <i>(Cognition and Instruction)</i>	Effect Size: 1.524 LCI: 0.239 UCI: 2.81 Weight: 0.328 Standard error: 0.656	
Wigfield (2008) 1_1	Role of reading engagement in mediating effects of reading comprehension instruction on reading outcomes <i>(Psychology in the Schools)</i>	Effect Size: 1.405 LCI: 1.058 UCI: 1.753 Weight: 0.851 Standard error: 0.177	
Bos (1990)	Effects of Interactive Vocabulary Instruction on the Vocabulary Learning and Reading Comprehension of Junior-High Learning Disabled Students <i>(Learning Disability Quarterly)</i>	Effect Size: 1.403 LCI: 0.701 UCI: 2.105 Weight: 0.613 Standard error: 0.358	
Bottomley (1993) 1_2	The effects of two procedures for teaching strategic reading on fourth-grade students' reading comprehension: Transactional strategies instruction and reciprocal teaching <i>(NA)</i>	Effect Size: 1.376 LCI: -0.646 UCI: 3.399 Weight: 0.166 Standard error: 1.032	
Sato (1996)	Instructional effects on children's strategy use, metacognition, and subsequent comprehension in reading <i>(NA)</i>	Effect Size: 1.351 LCI: 1 UCI: 1.703 Weight: 0.848 Standard error: 0.179	

Author	Title	Effect Size	Effect Size (Graph)
Miranda (1997)	Is attribution retraining necessary? Use of self-regulation procedures for enhancing the reading comprehension strategies of children with learning disabilities <i>(Journal of Learning Disabilities)</i>	Effect Size: 1.345 LCI: 0.652 UCI: 2.039 Weight: 0.619 Standard error: 0.354	
Englert (1991)	Making Students Partners in the Comprehension Process: Organizing the Reading "Posse" <i>(Learning Disability Quarterly)</i>	Effect Size: 1.328 LCI: 0.482 UCI: 2.174 Weight: 0.525 Standard error: 0.432	
Nolan (1991)	Self-questioning and prediction: Combining metacognitive strategies <i>(Journal of reading)</i>	Effect Size: 1.322 LCI: 0.492 UCI: 2.152 Weight: 0.535 Standard error: 0.423	
Payne (1992)	Basal reader instruction: Effects of comprehension monitoring training on reading comprehension, strategy use and attitude <i>(Reading Research and Instruction)</i>	Effect Size: 1.29 LCI: 0.478 UCI: 2.102 Weight: 0.545 Standard error: 0.414	
Kelly (1984) 1_1	Reading Comprehension Enhancement: A Metacognitive Generative Strategies Approach <i>(NA)</i>	Effect Size: 1.259 LCI: 0.28 UCI: 2.238 Weight: 0.455 Standard error: 0.499	
Bereiter (1985)	Use of Thinking Aloud in Identification and Teaching of Reading Comprehension Strategies <i>(Cognition and Instruction)</i>	Effect Size: 1.235 LCI: 0.471 UCI: 2 Weight: 0.574 Standard error: 0.39	
Kinnunen (1995)	Comprehension monitoring and the level of comprehension in high- and low-achieving primary school children's reading <i>(Learning and Instruction)</i>	Effect Size: 1.201 LCI: 0.192 UCI: 2.209 Weight: 0.44 Standard error: 0.514	
Dao (1993)	An investigation into the application of the reciprocal teaching procedure to enhance reading comprehension with educationally at-risk Vietnamese American pupils <i>(NA)</i>	Effect Size: 1.197 LCI: 0.584 UCI: 1.809 Weight: 0.673 Standard error: 0.312	
Boyle (2000)	The Effects of a Venn Diagram Strategy on the Literal, Inferential, and Relational Comprehension of Students with Mild Disabilities <i>(Learning Disabilities: A Multidisciplinary Journal)</i>	Effect Size: 1.175 LCI: 0.297 UCI: 2.054 Weight: 0.507 Standard error: 0.448	

Author	Title	Effect Size	Effect Size (Graph)
Fuchs (1999)	Effects of peer-assisted learning strategies in reading with and without training in elaborated help giving (<i>Elementary School Journal</i>)	Effect Size: 1.16 LCI: 0.888 UCI: 1.432 Weight: 0.894 Standard error: 0.139	
Stevens (1986)	The Effects of Strategy Training on the Identification of the Main Idea of Expository Passages. Report No. 4. (<i>NA</i>)	Effect Size: 1.138 LCI: 0.243 UCI: 2.032 Weight: 0.498 Standard error: 0.456	
O'Hara (2007)	The influence of supplemental instructional approaches upon the comprehension, metacognitive awareness, and motivation of struggling third-and fourth-grade readers (<i>NA</i>)	Effect Size: 1.097 LCI: 0.499 UCI: 1.695 Weight: 0.682 Standard error: 0.305	
Miller (1985)	The effects of general and specific self-instruction training on children's comprehension monitoring performances during reading (<i>Reading Research Quarterly</i>)	Effect Size: 1.082 LCI: 0.36 UCI: 1.804 Weight: 0.6 Standard error: 0.368	
Block (1993)	Strategy instruction in a literature-based reading program (<i>The Elementary School Journal</i>)	Effect Size: 1.036 LCI: 0.814 UCI: 1.259 Weight: 0.919 Standard error: 0.114	
Palincsar (1987)	Collaborating for Collaborative Learning of Text Comprehension (<i>NA</i>)	Effect Size: 1.02 LCI: 0.652 UCI: 1.388 Weight: 0.838 Standard error: 0.188	
Thames (1986)	Effects of Prereading Vocabulary Strategies on Vocabulary and Comprehension of Basal Stories by Primary Children (<i>NA</i>)	Effect Size: 1.013 LCI: 0.382 UCI: 1.644 Weight: 0.66 Standard error: 0.322	
Berninger (2003) RC	Comparison of three approaches to supplementary reading instruction for low-achieving 2nd grade readers (<i>Language, Speech and Hearing Services in Schools</i>)	Effect Size: 1.001 LCI: 0.398 UCI: 1.604 Weight: 0.679 Standard error: 0.308	
Calhoon (2005)	Effects of a peer-mediated phonological skill and reading comprehension program on reading skill acquisition for middle school students with reading disabilities (<i>Journal of Learning Disabilities</i>)	Effect Size: 0.958 LCI: 0.286 UCI: 1.631 Weight: 0.633 Standard error: 0.343	

Author	Title	Effect Size	Effect Size (Graph)
Westera (1995)	Reciprocal teaching of reading comprehension in a New Zealand high school (<i>Psychology in the Schools</i>)	Effect Size: 0.926 LCI: 0.126 UCI: 1.726 Weight: 0.552 Standard error: 0.408	
Berkeley (2011)	Reading comprehension strategy instruction and attribution retraining for secondary students with learning and other mild disabilities (<i>Journal of Learning Disabilities</i>)	Effect Size: 0.922 LCI: 0.258 UCI: 1.586 Weight: 0.638 Standard error: 0.339	
Philbrick (2002)	The effects of metacognitive reading instruction on students' comprehension of social studies text (<i>NA</i>)	Effect Size: 0.875 LCI: 0.431 UCI: 1.32 Weight: 0.788 Standard error: 0.227	
Kelly (1994)	Reciprocal Teaching in a Regular Primary School Classroom (<i>Journal of Educational Research</i>)	Effect Size: 0.872 LCI: -0.337 UCI: 2.081 Weight: 0.355 Standard error: 0.617	
Somers (2010)	The Enhanced Reading Opportunities Study Final Report: The Impact of Supplemental Literacy Courses for Struggling Ninth-Grade Readers. NCEE 2010-4021 (<i>NA</i>)	Effect Size: 0.87 LCI: 0.809 UCI: 0.932 Weight: 0.968 Standard error: 0.031	
Lederer (2000)	Reciprocal teaching of social studies in inclusive elementary classrooms (<i>Journal of Learning Disabilities</i>)	Effect Size: 0.86 LCI: 0.497 UCI: 1.222 Weight: 0.841 Standard error: 0.185	
Bossert (1996)	Children's Comprehension Monitoring: Training Children to Use Rereading to Aid Comprehension (<i>NA</i>)	Effect Size: 0.851 LCI: 0.123 UCI: 1.579 Weight: 0.597 Standard error: 0.371	
Stevens (1991)	The Effects of Cooperative Learning and Direct Instruction in Reading Comprehension Strategies on Main Idea Identification (<i>Journal of Educational Psychology</i>)	Effect Size: 0.84 LCI: 0.611 UCI: 1.068 Weight: 0.916 Standard error: 0.117	
Loranger (1997)	Comprehension strategies instruction: Does it make a difference? (<i>Reading Psychology: An International Quarterly</i>)	Effect Size: 0.805 LCI: 0.084 UCI: 1.525 Weight: 0.601 Standard error: 0.368	

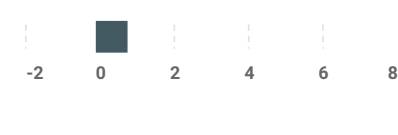
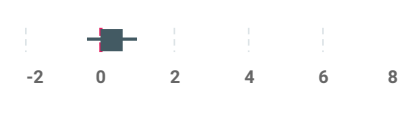
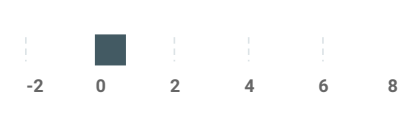
Author	Title	Effect Size	Effect Size (Graph)
Shortland-Jones (1986)	The development and testing of an instructional strategy for improving reading comprehension based on schema and metacognitive (NA)	Effect Size: 0.8 LCI: 0.114 UCI: 1.486 Weight: 0.624 Standard error: 0.35	
Villani (1987)	The effect of instruction in reading strategies on self-perceptions of scholastic competence among middle-school students (NA)	Effect Size: 0.798 LCI: 0.073 UCI: 1.523 Weight: 0.598 Standard error: 0.37	
Lightner (2010)	Expelled middle school students: A study of the effects of a short-term, after-school reading intervention program (NA)	Effect Size: 0.792 LCI: 0.22 UCI: 1.364 Weight: 0.7 Standard error: 0.292	
Lau (2007)	The effects of cognitive strategy instruction on Chinese reading comprehension among Hong Kong low achieving students (Reading and Writing)	Effect Size: 0.79 LCI: 0.28 UCI: 1.3 Weight: 0.743 Standard error: 0.26	
Baumann (1992)	Effect of Think-Aloud Instruction on Elementary Students' Comprehension Monitoring Abilities (Journal of Literacy Research)	Effect Size: 0.767 LCI: 0.153 UCI: 1.381 Weight: 0.671 Standard error: 0.314	
Guthrie (2004)	Increasing reading comprehension and engagement through concept-oriented reading instruction (Journal of Educational Psychology)	Effect Size: 0.756 LCI: 0.482 UCI: 1.03 Weight: 0.893 Standard error: 0.14	
Bos (1992) RC	Using Interactive Teaching and Learning Strategies to Promote Text Comprehension and Content Learning for Students with Learning Disabilities (International Journal of Disability, Development and Education)	Effect Size: 0.738 LCI: -0.01 UCI: 1.487 Weight: 0.584 Standard error: 0.382	
Kelly (1984) 1_2	Reading Comprehension Enhancement: A Metacognitive Generative Strategies Approach (NA)	Effect Size: 0.735 LCI: 0.016 UCI: 1.454 Weight: 0.602 Standard error: 0.367	
Singer (1982)	Active Comprehension: Problem-Solving Schema with Question Generation for Comprehension of Complex Short Stories (Reading Research Quarterly)	Effect Size: 0.728 LCI: -0.015 UCI: 1.47 Weight: 0.587 Standard error: 0.379	

Author	Title	Effect Size	Effect Size (Graph)
Taylor (1992)	Comprehension strategy instruction in the intermediate grades <i>(Literacy Research and Instruction)</i>	Effect Size: 0.701 LCI: 0.362 UCI: 1.039 Weight: 0.856 Standard error: 0.173	
Williams (1994)	An Instructional Program in Comprehension of Narrative Themes for Adolescents with Learning Disabilities <i>(Learning Disability Quarterly)</i>	Effect Size: 0.68 LCI: 0.17 UCI: 1.19 Weight: 0.743 Standard error: 0.26	
Sampson (1982)	The effects of instructional cloze on the comprehension, vocabulary, and divergent production of third-grade students <i>(Reading Research Quarterly)</i>	Effect Size: 0.67 LCI: 0.258 UCI: 1.082 Weight: 0.81 Standard error: 0.21	
León (1995)	Intervention in comprehension and memory strategies: Knowledge and use of text structure <i>(Learning and Instruction)</i>	Effect Size: 0.649 LCI: 0.148 UCI: 1.151 Weight: 0.749 Standard error: 0.256	
Nelson (2003)	The effect of metacognitive strategy instruction on fifth-grade comprehension of expository text <i>(NA)</i>	Effect Size: 0.645 LCI: -0.01 UCI: 1.3 Weight: 0.644 Standard error: 0.334	
Houtveen (2007)	Effects of metacognitive strategy instruction and instruction time on reading comprehension <i>(School Effectiveness and School Improvement)</i>	Effect Size: 0.643 LCI: 0.472 UCI: 0.814 Weight: 0.94 Standard error: 0.087	
Dole (1996)	The effects of strategy instruction on the comprehension performance of at-risk students <i>(Reading research quarterly)</i>	Effect Size: 0.631 LCI: 0.031 UCI: 1.231 Weight: 0.681 Standard error: 0.306	
Carnine (1984)	Utilization of contextual information in determining the meaning of unfamiliar words <i>(Reading Research Quarterly)</i>	Effect Size: 0.612 LCI: -0.21 UCI: 1.435 Weight: 0.539 Standard error: 0.42	
Li (1996)	Using the case method to improve reading comprehension of elementary students <i>(NA)</i>	Effect Size: 0.596 LCI: -0.031 UCI: 1.223 Weight: 0.663 Standard error: 0.32	

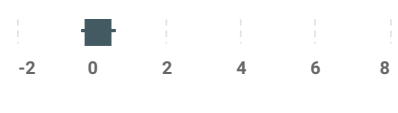
Author	Title	Effect Size	Effect Size (Graph)
Katims (1997)	Improving the reading comprehension of middle school students in inclusive classrooms <i>(Journal of Adolescent and Adult Literacy)</i>	Effect Size: 0.583 LCI: 0.304 UCI: 0.862 Weight: 0.89 Standard error: 0.142	
Esser (2001)	The effects of metacognitive strategy training and attribution retraining on reading comprehension in African -American students with learning disabilities <i>(NA)</i>	Effect Size: 0.58 LCI: -0.054 UCI: 1.214 Weight: 0.658 Standard error: 0.324	
Unrau (1991)	The Effects of Explicit Instruction on Critical Reading and Argumentative Writing: The TASK of Reading and Writing <i>(Annual Meeting of the American Educational Research Association)</i>	Effect Size: 0.564 LCI: 0.132 UCI: 0.995 Weight: 0.796 Standard error: 0.22	
Hafner (1965)	A one-month experiment in teaching context aids in fifth grade <i>(Journal of Educational Research)</i>	Effect Size: 0.56 LCI: -0.022 UCI: 1.142 Weight: 0.693 Standard error: 0.297	
Fischer (1989)	An experimental study of reciprocal teaching of expository text with third, fourth, and fifth-grade students enrolled in Chapter 1 Reading <i>(NA)</i>	Effect Size: 0.547 LCI: 0.302 UCI: 0.793 Weight: 0.908 Standard error: 0.125	
Brady (1990)	Improving the reading comprehension of middle school students through reciprocal teaching and semantic mapping strategies <i>(NA)</i>	Effect Size: 0.516 LCI: -0.482 UCI: 1.515 Weight: 0.445 Standard error: 0.509	
Paris (1986)	Children's reading strategies, metacognition, and motivation <i>(Developmental Review)</i>	Effect Size: 0.499 LCI: 0.396 UCI: 0.602 Weight: 0.961 Standard error: 0.052	
Klingner (2004)	Collaborative strategic reading: "Real-world" lessons from classroom teachers <i>(Remedial and Special Education)</i>	Effect Size: 0.492 LCI: 0.218 UCI: 0.767 Weight: 0.893 Standard error: 0.14	
Tregaskes (1989)	Effects of metacognitive strategies on reading comprehension <i>(Reading Research and Instruction)</i>	Effect Size: 0.488 LCI: 0.165 UCI: 0.81 Weight: 0.866 Standard error: 0.165	

Author	Title	Effect Size	Effect Size (Graph)
Kim (2006)	Improving the Reading Comprehension of Middle School Students with Disabilities through Computer-Assisted Collaborative Strategic Reading <i>(Remedial and Special Education)</i>	Effect Size: 0.483 LCI: -0.202 UCI: 1.167 Weight: 0.625 Standard error: 0.349	
DiCecco (2002)	Using graphic organizers to attain relational knowledge from expository text <i>(Journal of Learning Disabilities)</i>	Effect Size: 0.47 LCI: -0.334 UCI: 1.274 Weight: 0.55 Standard error: 0.41	
Bird (1984) RC	Effects of fifth graders' attitudes and critical thinking/reading skills resulting from a junior great books program. <i>(NA)</i>	Effect Size: 0.462 LCI: -0.009 UCI: 0.934 Weight: 0.769 Standard error: 0.241	
Klingner (1998)	Collaborative Strategic Reading during Social Studies in Heterogeneous Fourth-Grade Classrooms <i>(Elementary School Journal)</i>	Effect Size: 0.43 LCI: 0.088 UCI: 0.771 Weight: 0.854 Standard error: 0.174	
Lysynchuk (1990)	Reciprocal teaching improves standardized reading-comprehension performance in poor comprehenders <i>(The Elementary School Journal)</i>	Effect Size: 0.422 LCI: -0.045 UCI: 0.89 Weight: 0.772 Standard error: 0.238	
McNamara (2006)	Improving adolescent students' reading comprehension with iSTART <i>(Journal of Educational Computing Research)</i>	Effect Size: 0.402 LCI: -0.235 UCI: 1.038 Weight: 0.656 Standard error: 0.325	
Miller (1988)	Modified reciprocal teaching in a regular classroom <i>(Journal of Experimental Education)</i>	Effect Size: 0.401 LCI: -0.206 UCI: 1.009 Weight: 0.676 Standard error: 0.31	
Burke (1992) RC	The effects of an intervention program for improving reading comprehension and motivational attitudes with eighth-grade social studies students <i>(NA)</i>	Effect Size: 0.39 LCI: -0.002 UCI: 0.782 Weight: 0.822 Standard error: 0.2	
Rauenbusch (1991)	Making Reading More Difficult: A Degraded Text Microworld for Teaching Reading Comprehension Strategies <i>(Cognition and Instruction)</i>	Effect Size: 0.384 LCI: -0.187 UCI: 0.956 Weight: 0.701 Standard error: 0.292	

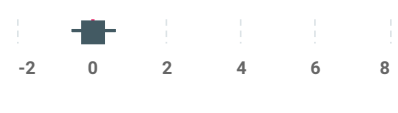

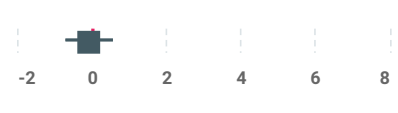
Author	Title	Effect Size	Effect Size (Graph)
Guthrie (2009)	Impacts of comprehensive reading instruction on diverse outcomes of low- and high-achieving readers <i>(Journal of Learning Disabilities)</i>	Effect Size: 0.384 LCI: 0.06 UCI: 0.707 Weight: 0.865 Standard error: 0.165	
Law (2008)	Effects of cooperative learning on second graders' learning from text <i>(Educational Psychology)</i>	Effect Size: 0.377 LCI: 0.113 UCI: 0.64 Weight: 0.898 Standard error: 0.134	
Carr (1989) RC	Attributional training and the generalization of reading strategies with underachieving children <i>(Learning and Individual Differences)</i>	Effect Size: 0.362 LCI: -0.38 UCI: 1.104 Weight: 0.588 Standard error: 0.379	
Guarino (1960)	An Investigation of the Effectiveness of Instruction Designed to Improve the Reader's Skill in using Context Clues to Derive Word Meaning <i>(NA)</i>	Effect Size: 0.361 LCI: 0.172 UCI: 0.549 Weight: 0.933 Standard error: 0.096	
Guthrie (1998)	Does concept-oriented reading instruction increase strategy use and conceptual learning from text? <i>(Journal of Educational Psychology)</i>	Effect Size: 0.349 LCI: 0.055 UCI: 0.643 Weight: 0.882 Standard error: 0.15	
Glaeser (1998)	The effects of an instructional model for improving reading comprehension achievement of students with learning disabilities, normally-achieving, at-risk, and gifted students in a multi-age, inclusive general education classroom <i>(NA)</i>	Effect Size: 0.344 LCI: -0.416 UCI: 1.105 Weight: 0.576 Standard error: 0.388	
Boyle (1996)	The effects of a cognitive mapping strategy on the literal and inferential comprehension of students with mild disabilities <i>(Learning Disability Quarterly)</i>	Effect Size: 0.34 LCI: -0.382 UCI: 1.061 Weight: 0.601 Standard error: 0.368	
Carriedo (1995) RC 1_1	Comprehension strategy training in content areas <i>(European Journal of Psychology of Education)</i>	Effect Size: 0.337 LCI: -0.384 UCI: 1.058 Weight: 0.601 Standard error: 0.368	
Brand-Gruwel (1998)	Improving Text Comprehension Strategies in Reading and Listening Settings <i>(Learning and Instruction)</i>	Effect Size: 0.331 LCI: 0.015 UCI: 0.646 Weight: 0.87 Standard error: 0.161	







Author	Title	Effect Size	Effect Size (Graph)
Lovett (2012)	Evaluating the efficacy of remediation for struggling readers in high school (<i>Journal of Learning Disabilities</i>)	Effect Size: 0.331 LCI: 0.084 UCI: 0.578 Weight: 0.907 Standard error: 0.126	
Duffy (1986)	The relationship between explicit verbal explanations during reading skill instruction and student awareness and achievement: A study of reading teacher effects (<i>Reading Research Quarterly</i>)	Effect Size: 0.31 LCI: 0.075 UCI: 0.545 Weight: 0.913 Standard error: 0.12	
Mothus (1997)	The effects of strategy instruction on the reading comprehension achievement of junior secondary school students (<i>NA</i>)	Effect Size: 0.31 LCI: -0.183 UCI: 0.804 Weight: 0.754 Standard error: 0.252	
Guthrie (1999)	Influences of concept-oriented reading instruction on strategy use and conceptual learning from text (<i>Elementary School Journal</i>)	Effect Size: 0.308 LCI: 0.053 UCI: 0.563 Weight: 0.903 Standard error: 0.13	
Peverly (2001) RC	The Effects of Adjunct Questions and Feedback on Improving the Reading Comprehension Skills of Learning-Disabled Adolescents (<i>Contemporary Educational Psychology</i>)	Effect Size: 0.298 LCI: -0.397 UCI: 0.994 Weight: 0.617 Standard error: 0.355	
Tomesen (1997)	Effects of a Training Program in Deriving Word Meanings (<i>Pedagogische Studiën</i>)	Effect Size: 0.29 LCI: -0.419 UCI: 0.999 Weight: 0.609 Standard error: 0.362	
De Corte (2001)	Improving text comprehension strategies in upper primary school children: a design experiment (<i>British Journal of Educational Psychology</i>)	Effect Size: 0.263 LCI: -0.011 UCI: 0.537 Weight: 0.893 Standard error: 0.14	
Uttero (1992)	The effects of the instruction-modeling-cooperative engagement model on children's print comprehension in science (<i>NA</i>)	Effect Size: 0.262 LCI: -0.033 UCI: 0.557 Weight: 0.882 Standard error: 0.15	
Chan (1991)	Promoting Strategy Generalization through Self-Instructional Training in Students with Reading Disabilities (<i>Journal of Learning Disabilities</i>)	Effect Size: 0.26 LCI: -0.253 UCI: 0.772 Weight: 0.741 Standard error: 0.261	

Author	Title	Effect Size	Effect Size (Graph)
Armstrong (2000)	The integration of reading vocabulary techniques with scientific terminology in a sixth-grade classroom (NA)	Effect Size: 0.249 LCI: 0 UCI: 0.498 Weight: 0.906 Standard error: 0.127	
Cantrell (2010)	The Impact of a Strategy-Based Intervention on the Comprehension and Strategy Use of Struggling Adolescent Readers (<i>Journal of Educational Psychology</i>)	Effect Size: 0.243 LCI: 0.014 UCI: 0.471 Weight: 0.916 Standard error: 0.116	
Graup (1985) RC	Response to literature: Student generated questions and collaborative learning as related to comprehension (Cognitive, Essays, Junior Great Books) (NA)	Effect Size: 0.235 LCI: -0.749 UCI: 1.22 Weight: 0.452 Standard error: 0.502	
Piercy (1997)	The effects of multi-strategy instruction upon reading comprehension (NA)	Effect Size: 0.23 LCI: -0.064 UCI: 0.524 Weight: 0.882 Standard error: 0.15	
Kim (2002)	Effects of computer -assisted collaborative strategic reading on reading comprehension for high -school students with learning disabilities (NA)	Effect Size: 0.224 LCI: -0.616 UCI: 1.065 Weight: 0.529 Standard error: 0.429	
Baumann (1984)	The effectiveness of a direct instruction paradigm for teaching main idea comprehension (<i>Reading Research Quarterly</i>)	Effect Size: 0.22 LCI: -0.373 UCI: 0.813 Weight: 0.686 Standard error: 0.302	
Vaughn (2000)	Fluency and comprehension interventions for third-grade students (<i>Remedial and Special Education</i>)	Effect Size: 0.216 LCI: -0.158 UCI: 0.589 Weight: 0.834 Standard error: 0.19	
Takala (2006)	The effects of reciprocal teaching on reading comprehension in mainstream and special (SLI) education (<i>Scandinavian Journal of Educational Research</i>)	Effect Size: 0.215 LCI: -0.472 UCI: 0.902 Weight: 0.623 Standard error: 0.351	
Johnson-Glenberg (2000) 1_1	Training reading comprehension in adequate decoders/poor comprehenders: Verbal versus visual strategies (<i>Journal of Educational Psychology</i>)	Effect Size: 0.21 LCI: -0.484 UCI: 0.904 Weight: 0.619 Standard error: 0.354	

Author	Title	Effect Size	Effect Size (Graph)
Wanzek (2011)	Efficacy of a Reading Intervention for Middle School Students with Learning Disabilities (<i>Exceptional Children</i>)	Effect Size: 0.207 LCI: -0.153 UCI: 0.567 Weight: 0.843 Standard error: 0.184	
Baumann (2002)	Teaching morphemic and contextual analysis to fifth-grade students (<i>Reading Research Quarterly</i>)	Effect Size: 0.194 LCI: -0.299 UCI: 0.687 Weight: 0.755 Standard error: 0.252	
Faggella-Luby (2011)	RTI in a middle school: Findings and practical implications of a tier 2 reading comprehension study (<i>Learning Disability Quarterly</i>)	Effect Size: 0.173 LCI: -0.214 UCI: 0.559 Weight: 0.826 Standard error: 0.197	
Jeffers (1990)	A comparative study of metacognitive strategies in eighth-grade reading improvement students (<i>NA</i>)	Effect Size: 0.161 LCI: -0.26 UCI: 0.582 Weight: 0.803 Standard error: 0.215	
Van Den Bos (1998)	Text comprehension strategy instruction with poor readers (<i>Reading and Writing</i>)	Effect Size: 0.156 LCI: -0.162 UCI: 0.473 Weight: 0.868 Standard error: 0.162	
Gee (1997)	The interactive and combined effects of domain-specific knowledge and strategic knowledge on reading comprehension (<i>NA</i>)	Effect Size: 0.15 LCI: -0.34 UCI: 0.64 Weight: 0.757 Standard error: 0.25	
Anderberg (1996)	The effects of reciprocal teaching techniques on reading comprehension for limited English proficient students (<i>NA</i>)	Effect Size: 0.14 LCI: -0.246 UCI: 0.526 Weight: 0.826 Standard error: 0.197	
Chamberlain (2007)	A randomized evaluation of the Success for All Middle School reading program (<i>Middle Grades Research Journal</i>)	Effect Size: 0.134 LCI: -0.061 UCI: 0.329 Weight: 0.931 Standard error: 0.1	
Vaughn (2010)	Response to Intervention for Middle School Students with Reading Difficulties: Effects of a Primary and Secondary Intervention (<i>School Psychology Review</i>)	Effect Size: 0.124 LCI: -0.108 UCI: 0.357 Weight: 0.914 Standard error: 0.118	

Author	Title	Effect Size	Effect Size (Graph)
Carriedo (1995) RC 1_2	Comprehension strategy training in content areas (<i>European Journal of Psychology of Education</i>)	Effect Size: 0.12 LCI: -0.272 UCI: 0.512 Weight: 0.822 Standard error: 0.2	
Clarke (2010) RC	Ameliorating Children's Reading-Comprehension Difficulties: A Randomized Controlled Trial (<i>Psychological Science</i>)	Effect Size: 0.116 LCI: -0.489 UCI: 0.722 Weight: 0.677 Standard error: 0.309	
Paris (1984)	Informed Strategies for Learning: A program to improve children's reading awareness and comprehension (<i>Journal of Educational Psychology</i>)	Effect Size: 0.112 LCI: -0.192 UCI: 0.415 Weight: 0.877 Standard error: 0.155	
Vaughn (2011)	Efficacy of Collaborative Strategic Reading with Middle School Students (<i>American Educational Research Journal</i>)	Effect Size: 0.109 LCI: -0.031 UCI: 0.25 Weight: 0.951 Standard error: 0.072	
Taylor (1984) RC	The Effects of Text Structure Instruction on Middle-Grade Students' Comprehension and Production of Expository Text. (<i>Reading Research Quarterly</i>)	Effect Size: 0.101 LCI: -0.349 UCI: 0.55 Weight: 0.784 Standard error: 0.23	
Crawford (2014)	LIT Programme: Evaluation report and executive summary (NA)	Effect Size: 0.09 LCI: -0.039 UCI: 0.219 Weight: 0.954 Standard error: 0.066	
McCallum (2011)	Improving reading comprehension of at-risk high-school students: The ART of reading program (<i>Psychology in the Schools</i>)	Effect Size: 0.082 LCI: -0.304 UCI: 0.469 Weight: 0.826 Standard error: 0.197	
Bramlett (1994) RC	Implementing cooperative learning: A field study evaluating issues for school-based consultants. (<i>Journal of School Psychology</i>)	Effect Size: 0.076 LCI: -0.122 UCI: 0.274 Weight: 0.929 Standard error: 0.101	
Moore (1995)	The effects of strategy training on high school students' learning from science texts (<i>European Journal of Psychology of Education</i>)	Effect Size: 0.074 LCI: -0.539 UCI: 0.686 Weight: 0.672 Standard error: 0.313	

Author	Title	Effect Size	Effect Size (Graph)
Wigfield (2008) 1_2	Role of reading engagement in mediating effects of reading comprehension instruction on reading outcomes (<i>Psychology in the Schools</i>)	Effect Size: 0.058 LCI: -0.237 UCI: 0.353 Weight: 0.881 Standard error: 0.151	
van Keer (2010) RC	The impact of cross-age peer tutoring on third and sixth graders' reading strategy awareness, reading strategy use, and reading comprehension (<i>Middle Grades Research Journal</i>)	Effect Size: 0.051 LCI: -0.177 UCI: 0.279 Weight: 0.916 Standard error: 0.116	
Therrien (2006)	Effect of a Combined Repeated Reading and Question Generation Intervention on Reading Achievement (<i>Learning Disabilities Research & Practice</i>)	Effect Size: 0.04 LCI: -0.688 UCI: 0.769 Weight: 0.596 Standard error: 0.372	
Dynarski (2007) RC	Effectiveness of reading and mathematics software products: Findings from the first student cohort. (<i>NA</i>)	Effect Size: 0.03 LCI: -0.053 UCI: 0.113 Weight: 0.965 Standard error: 0.042	
Vaughn (2010)	The Relative Effects of Group Size on Reading Progress of Older Students with Reading Difficulties (<i>Reading and Writing: An Interdisciplinary Journal</i>)	Effect Size: 0.03 LCI: -0.162 UCI: 0.222 Weight: 0.932 Standard error: 0.098	
Rabren (1994)	The differential effects of two systematic reading comprehension approaches with students with learning disabilities (<i>NA</i>)	Effect Size: 0.021 LCI: -0.599 UCI: 0.641 Weight: 0.668 Standard error: 0.316	
McKeown (2009) RC 1_2	Rethinking reading comprehension instruction: A comparison of instruction for strategies and content approaches (<i>Reading Research Quarterly</i>)	Effect Size: -0.028 LCI: -0.481 UCI: 0.425 Weight: 0.782 Standard error: 0.231	
Berkeley (2007) RC	Reading comprehension strategy instruction and attribution retraining for secondary students with disabilities (<i>NA</i>)	Effect Size: -0.075 LCI: -0.687 UCI: 0.538 Weight: 0.672 Standard error: 0.313	
Johnson-Glenberg (2000) 1_2	Training reading comprehension in adequate decoders/poor comprehenders: Verbal versus visual strategies (<i>Journal of Educational Psychology</i>)	Effect Size: -0.103 LCI: -0.767 UCI: 0.562 Weight: 0.637 Standard error: 0.339	

Author	Title	Effect Size	Effect Size (Graph)
McKeown (2009) RC 1_1	Rethinking reading comprehension instruction: A comparison of instruction for strategies and content approaches <i>(Reading Research Quarterly)</i>	Effect Size: -0.108 LCI: -0.561 UCI: 0.345 Weight: 0.782 Standard error: 0.231	
Alfassi (1998)	Reading for Meaning: The Efficacy of Reciprocal Teaching in Fostering Reading Comprehension in High School Students in Remedial Reading Classes <i>(American Educational Research Journal)</i>	Effect Size: -0.232 LCI: -0.73 UCI: 0.267 Weight: 0.751 Standard error: 0.254	
Leu (2005)	Evaluating the development of scientific knowledge and new forms of reading comprehension during online learning <i>(Final report presented to the North Central Regional Educational Laboratory/Learning Point Associates. Retrieved May)</i>	Effect Size: -0.239 LCI: -0.82 UCI: 0.342 Weight: 0.694 Standard error: 0.296	
Hedin (2008)	The effects of thinking aloud on the comprehension and monitoring of sixth graders <i>(NA)</i>	Effect Size: -0.284 LCI: -0.93 UCI: 0.362 Weight: 0.65 Standard error: 0.33	
Moore (1993) RC	Effects of strategy training and classwide peer tutoring on the reading comprehension of students with learning disabilities <i>(NA)</i>	Effect Size: -0.501 LCI: -1.717 UCI: 0.714 Weight: 0.353 Standard error: 0.62	
Alvermann (1988)	Effects of Spontaneous and Induced Lookbacks on Self-Perceived High- and Low-Ability Comprehenders AU <i>(The Journal of Educational Research)</i>	Effect Size: -0.627 LCI: -1.13 UCI: -0.124 Weight: 0.748 Standard error: 0.256	
Souvignier (2006)	Using self-regulation as a framework for implementing strategy instruction to foster reading comprehension <i>(Learning and Instruction)</i>	Effect Size: -0.771 LCI: -0.98 UCI: -0.562 Weight: 0.925 Standard error: 0.107	
Radcliffe (2008)	Improving reading in a middle school science classroom <i>(Journal of Adolescent and Adult Literacy)</i>	Effect Size: -1.299 LCI: -1.916 UCI: -0.683 Weight: 0.67 Standard error: 0.314	