

Oral language interventions

Very high impact for very low cost based on extensive evidence

Oral language interventions refer to approaches that emphasise the importance of spoken language and verbal interaction in the classroom.

Implementation cost



Evidence strength



Impact (months)



Subject breakdown

maths: 5
 reading: 132
 toolkit: 154

School phase breakdown

primary: 75
 secondary: 30
 toolkit: 154

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 (154)

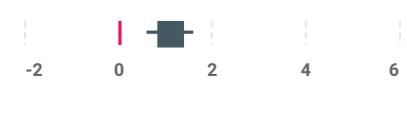
The forest plot below is a graphical representation of the results of all included studies in this Toolkit strand. It shows the effect size and confidence interval of each study, and whether the particular intervention in that study was more or less effective than standard practice or other alternative 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)
Freeman (2008)	A comparison of the effects of two different levels of implementation of read-alouds on kindergarten students comprehension and vocabulary acquisition (NA)	Effect Size: 4.317 LCI: 2.853 UCI: 5.78 Weight: 0.262 Standard error: 0.747	
Ahlfors (1979)	Learning word meanings: A comparison of three instructional procedures (NA)	Effect Size: 2.61 LCI: 1.069 UCI: 4.152 Weight: 0.243 Standard error: 0.786	
Lieberman (1965)	The effect of direct instruction in vocabulary concepts on reading achievement. (NA)	Effect Size: 2.382 LCI: 1.574 UCI: 3.189 Weight: 0.511 Standard error: 0.412	
Englert (1991)	Making Students Partners in the Comprehension Process: Organizing the Reading "Posse" (<i>Learning Disability Quarterly</i>)	Effect Size: 1.841 LCI: 0.921 UCI: 2.761 Weight: 0.455 Standard error: 0.469	
Cashman (1977)	The effects of Junior Great Books program at the intermediate grade level (4–5–6) on two intellectual operations, verbal meaning, and reasoning ability (NA)	Effect Size: 1.8 LCI: 1.408 UCI: 2.192 Weight: 0.748 Standard error: 0.2	
Lucas (2006)	The effects of using sign language to improve the receptive vocabulary of hearing ESL kindergarten students (NA)	Effect Size: 1.762 LCI: 1.362 UCI: 2.162 Weight: 0.744 Standard error: 0.204	

Author	Title	Effect Size	Effect Size (Graph)
Morrow (1985) 1_2	Retelling Stories: A Strategy for Improving Young Childrens Comprehension, Concept of Story Structure, and Oral Language Complexity (<i>Elementary School Journal</i>)	Effect Size: 1.688 LCI: 1.184 UCI: 2.192 Weight: 0.684 Standard error: 0.257	
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: 0.638 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: 0.604 Standard error: 0.327	
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: 1.538 LCI: 0.824 UCI: 2.252 Weight: 0.561 Standard error: 0.364	
Kinnunen (1995)	Comprehension monitoring and the level of comprehension in high-and low-achieving primary school childrens reading (<i>Learning and Instruction</i>)	Effect Size: 1.519 LCI: 0.279 UCI: 2.759 Weight: 0.326 Standard error: 0.633	
Kameenui (1982) 1_1	Effects of text construction and instructional procedures for teaching word meanings on comprehension and recall (<i>Reading Research Quarterly</i>)	Effect Size: 1.515 LCI: 0.928 UCI: 2.103 Weight: 0.635 Standard error: 0.3	
Feitelson (1993)	Effects of Listening to Story Reading on Aspects of Literacy Acquisition in a Diglossic Situation (<i>Reading Research Quarterly</i>)	Effect Size: 1.486 LCI: 1.091 UCI: 1.88 Weight: 0.747 Standard error: 0.201	
Morrow (1992)	The effect of mediated story retelling on listening comprehension, story structure, and oral language development in children with learning disabilities (<i>National Reading Conference</i>)	Effect Size: 1.461 LCI: 0.994 UCI: 1.929 Weight: 0.706 Standard error: 0.238	
Ribowsky (1985)	The effects of a code emphasis approach and a whole language approach upon emergent literacy of kindergarten children (<i>NA</i>)	Effect Size: 1.432 LCI: 0.823 UCI: 2.04 Weight: 0.622 Standard error: 0.31	

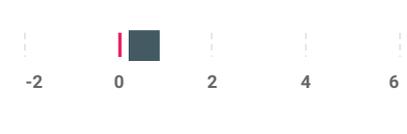
Author	Title	Effect Size	Effect Size (Graph)
Coyne (2007) 1_2	Vocabulary Intervention for Kindergarten Students: Comparing Extended Instruction to Embedded Instruction and Incidental Exposure <i>(Learning Disability Quarterly)</i>	Effect Size: 1.407 LCI: 0.622 UCI: 2.191 Weight: 0.523 Standard error: 0.4	
Sénéchal (1997)	The differential effect of storybook reading on preschoolers acquisition of expressive and receptive vocabulary <i>(Journal of Child Language)</i>	Effect Size: 1.384 LCI: 0.817 UCI: 1.951 Weight: 0.647 Standard error: 0.289	
van Kleeck (2006)	Fostering Literal and Inferential Language Skills in Head Start Preschoolers with Language Impairment Using Scripted Book-Sharing Discussions <i>(American Journal of Speech-Language Pathology)</i>	Effect Size: 1.367 LCI: 0.561 UCI: 2.173 Weight: 0.511 Standard error: 0.411	
Mastropieri (1985) OL 1_1	Mnemonic Vocabulary Instruction for Learning Disabled Students <i>(Learning Disability Quarterly)</i>	Effect Size: 1.256 LCI: 0.49 UCI: 2.023 Weight: 0.532 Standard error: 0.391	
Bridge (1983)	Using predictable materials vs. preprimers to teach beginning sight words <i>(The Reading Teacher)</i>	Effect Size: 1.247 LCI: 0.148 UCI: 2.346 Weight: 0.377 Standard error: 0.561	
Coyne (2007) 1_1	Vocabulary Intervention for Kindergarten Students: Comparing Extended Instruction to Embedded Instruction and Incidental Exposure <i>(Learning Disability Quarterly)</i>	Effect Size: 1.229 LCI: 0.465 UCI: 1.992 Weight: 0.534 Standard error: 0.39	
Saunders (1999)	Effects of instructional conversations and literature logs on limited- and fluent-English-proficient students story comprehension and thematic understanding <i>(The Elementary School Journal)</i>	Effect Size: 1.187 LCI: 0.342 UCI: 2.031 Weight: 0.491 Standard error: 0.431	
Morrow (1989)	The effect of small group story reading on children's questions and comments <i>(National Reading Conference)</i>	Effect Size: 1.167 LCI: 0.393 UCI: 1.941 Weight: 0.528 Standard error: 0.395	
Beck (2007)	Increasing Young Low-Income Children's Oral Vocabulary Repertoires through Rich and Focused Instruction <i>(The Elementary School Journal)</i>	Effect Size: 1.154 LCI: 0.525 UCI: 1.782 Weight: 0.611 Standard error: 0.321	

Author	Title	Effect Size	Effect Size (Graph)
Morrow (1984) OL	Reading stories to young children: Effects of story structure and traditional questioning strategies on comprehension (<i>Journal of Reading Behavior</i>)	Effect Size: 1.106 LCI: 0.728 UCI: 1.484 Weight: 0.756 Standard error: 0.193	
Hoisington (1968)	An experimental investigation of a linguistic approach to vocabulary development which emphasized structural analysis: Prefixes, suffixes and root words (<i>NA</i>)	Effect Size: 1.104 LCI: 0.681 UCI: 1.528 Weight: 0.731 Standard error: 0.216	
Ammon (1971)	Effects of Training Black Preschool Children in Vocabulary versus Sentence Construction (<i>Journal of Educational Psychology</i>)	Effect Size: 1.088 LCI: 0.568 UCI: 1.607 Weight: 0.675 Standard error: 0.265	
Ewers (1999)	Kindergartners Vocabulary Acquisition as a Function of Active vs. Passive Storybook Reading, Prior Vocabulary, and Working Memory (<i>Reading Psychology</i>)	Effect Size: 1.088 LCI: 0.569 UCI: 1.608 Weight: 0.675 Standard error: 0.265	
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: 1.085 LCI: 0.31 UCI: 1.86 Weight: 0.528 Standard error: 0.396	
Morrow (1988)	Young Childrens Responses to One-to-One Story Readings in School Settings (<i>Reading Research Quarterly</i>)	Effect Size: 1.023 LCI: 0.453 UCI: 1.593 Weight: 0.645 Standard error: 0.291	
Conte (1989) OL	Repeated Readings Using Audiotaped Material Enhances Oral Reading in Children with Reading Difficulties (<i>Journal of Communication Disorders</i>)	Effect Size: 1.021 LCI: -0.133 UCI: 2.176 Weight: 0.356 Standard error: 0.589	
Mastropieri (1985) OL 1_2	Mnemonic Vocabulary Instruction for Learning Disabled Students (<i>Learning Disability Quarterly</i>)	Effect Size: 0.982 LCI: 0.218 UCI: 1.745 Weight: 0.534 Standard error: 0.39	
Bonds (1987)	A comparative study of the efficacy of two approaches to introducing reading skills to kindergarteners (<i>NA</i>)	Effect Size: 0.976 LCI: 0.531 UCI: 1.422 Weight: 0.718 Standard error: 0.228	

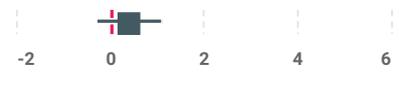
Author	Title	Effect Size	Effect Size (Graph)
Graup (1985) OL	Response to literature: Student generated questions and collaborative learning as related to comprehension (Cognitive, Essays, Junior Great Books) (NA)	Effect Size: 0.967 LCI: -0.087 UCI: 2.02 Weight: 0.395 Standard error: 0.537	
Korat (2007)	Electronic Books versus Adult Readers: Effects on Childrens Emergent Literacy as a Function of Social Class (<i>Journal of Computer Assisted Learning</i>)	Effect Size: 0.953 LCI: 0.465 UCI: 1.44 Weight: 0.694 Standard error: 0.249	
Box (1993)	Shared Reading Experiences and Head Start Childrens Concepts about Print and Story Structure (<i>Perceptual and Motor Skills</i>)	Effect Size: 0.93 LCI: 0.342 UCI: 1.518 Weight: 0.634 Standard error: 0.3	
Hasson (1981)	The use of aural cloze as an instructional technique for the enhancement of vocabulary and listening comprehension of kindergarten children (NA)	Effect Size: 0.847 LCI: 0.379 UCI: 1.315 Weight: 0.705 Standard error: 0.239	
Medo (1993)	The Effects of Vocabulary Instruction on Readers Ability to Make Causal Connections (<i>Reading Research and Instruction</i>)	Effect Size: 0.83 LCI: 0.31 UCI: 1.35 Weight: 0.675 Standard error: 0.265	
Chamberlain (1993) OL	Philosophy for Children program and the development of critical thinking of gifted elementary students (NA)	Effect Size: 0.809 LCI: 0.353 UCI: 1.266 Weight: 0.712 Standard error: 0.233	
Loranger (1997)	Comprehension strategy instruction: Does it make a difference? (<i>Reading Psychology</i>)	Effect Size: 0.805 LCI: 0.235 UCI: 1.374 Weight: 0.645 Standard error: 0.291	
Wasik (2006)	The Effects of a Language and Literacy Intervention on Head Start Children and Teachers (<i>Journal of Educational Psychology</i>)	Effect Size: 0.8 LCI: 0.506 UCI: 1.094 Weight: 0.798 Standard error: 0.15	
Li (1996)	Using the case method to improve reading comprehension of elementary students (NA)	Effect Size: 0.793 LCI: 0.146 UCI: 1.44 Weight: 0.6 Standard error: 0.33	

Author	Title	Effect Size	Effect Size (Graph)
Kertoy (1994)	Adult interactive strategies and the spontaneous comments of preschoolers during joint storybook readings <i>(Journal of Research in Childhood Education)</i>	Effect Size: 0.787 LCI: -0.242 UCI: 1.816 Weight: 0.405 Standard error: 0.525	
Kim (2002)	The effects of group -monitoring on transfer of learning in small group discussions <i>(NA)</i>	Effect Size: 0.782 LCI: 0.187 UCI: 1.377 Weight: 0.63 Standard error: 0.304	
Brooks (2006)	Becoming acquainted with the faces of words: Fostering vocabulary development in kindergarten students through storybook readings <i>(NA)</i>	Effect Size: 0.752 LCI: 0.165 UCI: 1.339 Weight: 0.635 Standard error: 0.299	
McKeown (1983)	The effects of long-term vocabulary instruction on reading comprehension: A replication <i>(Journal of Literacy Research)</i>	Effect Size: 0.75 LCI: 0.436 UCI: 1.064 Weight: 0.789 Standard error: 0.16	
Nelson (2003) OL	The effect of metacognitive strategy instruction on fifth-grade comprehension of expository text <i>(NA)</i>	Effect Size: 0.741 LCI: 0.089 UCI: 1.392 Weight: 0.597 Standard error: 0.332	
Bos (1992) OL	Using Interactive Teaching and Learning Strategies to Promote Text Comprehension and Content Learning for Students with Learning Disabilities <i>(International Journal of Disability, Development and Education)</i>	Effect Size: 0.738 LCI: -0.01 UCI: 1.487 Weight: 0.542 Standard error: 0.382	
Buckner (1978)	Supportive Evidence for the Language Experience Approach at the Kindergarten Level <i>(Graduate Student Association Journal)</i>	Effect Size: 0.705 LCI: 0 UCI: 1.41 Weight: 0.567 Standard error: 0.36	
Dole (1995)	Teaching Vocabulary within the Context of Literature <i>(Journal of Reading)</i>	Effect Size: 0.695 LCI: 0.077 UCI: 1.312 Weight: 0.617 Standard error: 0.315	
Bochna (2006)	The impact of instruction in text structure on listening comprehension in preschool age students <i>(NA)</i>	Effect Size: 0.695 LCI: 0.015 UCI: 1.375 Weight: 0.581 Standard error: 0.347	

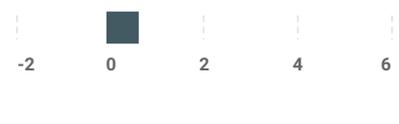
Author	Title	Effect Size	Effect Size (Graph)
Roskos (2011) OL	Assessment of the Design Efficacy of a Preschool Vocabulary Instruction Technique <i>(Journal of Research in Childhood Education)</i>	Effect Size: 0.681 LCI: 0.211 UCI: 1.15 Weight: 0.704 Standard error: 0.24	
Harvey (2002)	The impact of childrens audiobooks on preschoolers expressive and receptive vocabulary acquisition <i>(NA)</i>	Effect Size: 0.678 LCI: 0.434 UCI: 0.923 Weight: 0.82 Standard error: 0.125	
Coyne (2004)	Teaching Vocabulary During Shared Storybook Readings: An Examination of Differential Effects <i>(Exceptionality)</i>	Effect Size: 0.677 LCI: 0.172 UCI: 1.183 Weight: 0.683 Standard error: 0.258	
Wasik (2001)	Beyond the Pages of a Book: Interactive Book Reading and Language Development in Preschool Classrooms <i>(Journal of Educational Psychology)</i>	Effect Size: 0.673 LCI: 0.305 UCI: 1.04 Weight: 0.761 Standard error: 0.188	
Murphy (2007) OL	Enhancing print knowledge, phonological awareness, and oral language skills with at-risk preschool children in Head Start classrooms <i>(NA)</i>	Effect Size: 0.666 LCI: -0.29 UCI: 1.623 Weight: 0.437 Standard error: 0.488	
Carney (1984)	Preteaching Vocabulary and the Comprehension of Social Studies Materials by Elementary School Children <i>(Social Education)</i>	Effect Size: 0.649 LCI: -0.064 UCI: 1.363 Weight: 0.562 Standard error: 0.364	
Hafner (1965)	A One-Month Experiment in Teaching Context Aids in Fifth Grade <i>(The Journal of Educational Research)</i>	Effect Size: 0.629 LCI: 0.054 UCI: 1.204 Weight: 0.642 Standard error: 0.293	
Stauffer (1976)	Comparative effects of language arts approach and basal reader approach to first grade reading achievement. <i>(NA)</i>	Effect Size: 0.617 LCI: 0.431 UCI: 0.802 Weight: 0.842 Standard error: 0.095	
Justice (2005)	Learning new words from storybooks: An efficacy study with at-risk kindergartners <i>(Language, speech, and hearing services in schools)</i>	Effect Size: 0.613 LCI: 0.081 UCI: 1.146 Weight: 0.667 Standard error: 0.272	

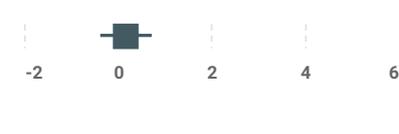
Author	Title	Effect Size	Effect Size (Graph)
Englert (1994)	Lesson talk as the work of reading groups: the effectiveness of two interventions <i>(Journal of learning disabilities)</i>	Effect Size: 0.612 LCI: 0.208 UCI: 1.016 Weight: 0.742 Standard error: 0.206	
Crevecoeur (2008)	Investigating the effects of a kindergarten vocabulary intervention on the word learning of English-language learners <i>(NA)</i>	Effect Size: 0.594 LCI: 0.102 UCI: 1.085 Weight: 0.692 Standard error: 0.251	
Walsh (2006)	The Effect of Questioning Style during Storybook Reading on Novel Vocabulary Acquisition of Preschoolers <i>(Early Childhood Education Journal)</i>	Effect Size: 0.592 LCI: -0.247 UCI: 1.432 Weight: 0.494 Standard error: 0.428	
Brabham (2002)	Effects of Teachers Reading-Aloud Styles on Vocabulary Acquisition and Comprehension of Students in the Early Elementary Grades <i>(Journal of Educational Psychology)</i>	Effect Size: 0.591 LCI: 0.137 UCI: 1.045 Weight: 0.713 Standard error: 0.232	
Reznitskaya (2001)	Influence of Oral Discussion on Written Argument <i>(Discourse Processes)</i>	Effect Size: 0.59 LCI: 0.218 UCI: 0.962 Weight: 0.759 Standard error: 0.19	
Banks (1987)	A study of the effects of the critical thinking skills program, Philosophy for Children, on a standardized achievement test. <i>(NA)</i>	Effect Size: 0.577 LCI: 0.322 UCI: 0.831 Weight: 0.816 Standard error: 0.13	
Yeazell (1982) OL	Improving reading comprehension through philosophy for children <i>(Reading Psychology)</i>	Effect Size: 0.536 LCI: 0.22 UCI: 0.852 Weight: 0.788 Standard error: 0.161	
Bereiter (1985)	Use of Thinking Aloud in Identification and Teaching of Reading Comprehension Strategies <i>(Cognition and Instruction)</i>	Effect Size: 0.527 LCI: -0.191 UCI: 1.245 Weight: 0.559 Standard error: 0.366	
Morrow (1985) 1_1	Retelling Stories: A Strategy for Improving Young Childrens Comprehension, Concept of Story Structure, and Oral Language Complexity <i>(Elementary School Journal)</i>	Effect Size: 0.519 LCI: 0.001 UCI: 1.038 Weight: 0.675 Standard error: 0.265	

Author	Title	Effect Size	Effect Size (Graph)
Karweit (1989)	The effects of a story-reading program on the vocabulary and story comprehension skills of disadvantaged prekindergarten and kindergarten students (<i>Early Education and Development</i>)	Effect Size: 0.512 LCI: 0.148 UCI: 0.876 Weight: 0.764 Standard error: 0.186	
Mason (1990)	Shared Book Reading in an Early Start Program for At-Risk Children. (<i>National Reading Conference</i>)	Effect Size: 0.486 LCI: 0.225 UCI: 0.747 Weight: 0.813 Standard error: 0.133	
Kameenui (1982) 1_2	Effects of text construction and instructional procedures for teaching word meanings on comprehension and recall (<i>Reading Research Quarterly</i>)	Effect Size: 0.485 LCI: -0.329 UCI: 1.299 Weight: 0.507 Standard error: 0.415	
McKeown (1985)	Some Effects of the Nature and Frequency of Vocabulary Instruction on the Knowledge and Use of Words (<i>Reading Research Quarterly</i>)	Effect Size: 0.477 LCI: -0.015 UCI: 0.969 Weight: 0.691 Standard error: 0.251	
Hyman (1967) OL	First grade readiness of children who have had summer head start programs (<i>The Training school bulletin</i>)	Effect Size: 0.466 LCI: -0.163 UCI: 1.095 Weight: 0.61 Standard error: 0.321	
Haley (2017)	Oral language skills intervention in pre-school-a cautionary tale (<i>International Journal of Language & Communication Disorders</i>)	Effect Size: 0.46 LCI: -0.52 UCI: 1.44 Weight: 0.427 Standard error: 0.5	
Howard (1992)	Seminar discussion and enlarged understanding of ideas (<i>NA</i>)	Effect Size: 0.46 LCI: 0.034 UCI: 0.886 Weight: 0.729 Standard error: 0.217	
Chow (2003)	Promoting Language and Literacy Development through Parent-Child Reading in Hong Kong Preschoolers (<i>Early Education and Development</i>)	Effect Size: 0.458 LCI: -0.064 UCI: 0.98 Weight: 0.674 Standard error: 0.266	
Beck (1982)	Effects of Long-Term Vocabulary Instruction on Lexical Access and Reading Comprehension (<i>Journal of Educational Psychology</i>)	Effect Size: 0.43 LCI: -0.155 UCI: 1.016 Weight: 0.636 Standard error: 0.299	

Author	Title	Effect Size	Effect Size (Graph)
Baumann (1992)	Effect of think-aloud instruction on elementary students comprehension monitoring abilities <i>(Journal of Reading Behavior)</i>	Effect Size: 0.427 LCI: -0.172 UCI: 1.025 Weight: 0.628 Standard error: 0.305	
Coyne (2007)	Direct and extended vocabulary instruction in Kindergarten: Investigating transfer effects <i>(Journal of Research on Educational Effectiveness)</i>	Effect Size: 0.42 LCI: 0.001 UCI: 0.839 Weight: 0.733 Standard error: 0.214	
Leung (2008)	Preschoolers acquisition of scientific vocabulary through repeated read-aloud events, retellings, and hands-on science activities <i>(Reading Psychology)</i>	Effect Size: 0.39 LCI: -0.311 UCI: 1.09 Weight: 0.569 Standard error: 0.357	
McKeown (2009) OL 1_2	Rethinking Reading Comprehension Instruction: A Comparison of Instruction for Strategies and Content Approaches <i>(Reading Research Quarterly)</i>	Effect Size: 0.388 LCI: -0.067 UCI: 0.842 Weight: 0.713 Standard error: 0.232	
Ehlinger (1988) OL	The relative merits of characteristics of teacher verbal modeling in influencing comprehension and comprehension monitoring of eighth-grade readers <i>(NA)</i>	Effect Size: 0.368 LCI: -0.203 UCI: 0.939 Weight: 0.645 Standard error: 0.291	
Aram (2004) OL	Joint Storybook Reading and Joint Writing Interventions among Low Ses Preschoolers: Differential Contributions to Early Literacy <i>(Early Childhood Research Quarterly)</i>	Effect Size: 0.362 LCI: -0.161 UCI: 0.886 Weight: 0.672 Standard error: 0.267	
Justice (2010)	Print-focused read-alouds in preschool classrooms: Intervention effectiveness and moderators of child outcomes <i>(Language, Speech, and Hearing Services in Schools)</i>	Effect Size: 0.362 LCI: 0.128 UCI: 0.597 Weight: 0.824 Standard error: 0.119	
Rainey (1968)	The Development and Evaluation of a Language Development Program for Culturally Deprived Preschool Children <i>(NA)</i>	Effect Size: 0.36 LCI: -0.15 UCI: 0.869 Weight: 0.681 Standard error: 0.26	
Wixson (1986)	Vocabulary Instruction and Childrens Comprehension of Basal Stories <i>(Reading Research Quarterly)</i>	Effect Size: 0.358 LCI: -0.003 UCI: 0.719 Weight: 0.765 Standard error: 0.184	

Author	Title	Effect Size	Effect Size (Graph)
Brady (1990)	Improving the reading comprehension of middle school students through reciprocal teaching and semantic mapping strategies (NA)	Effect Size: 0.346 LCI: -0.798 UCI: 1.49 Weight: 0.36 Standard error: 0.584	
Carriedo (1995) OL 1_1	Comprehension strategy training in content areas (<i>European Journal of Psychology of Education</i>)	Effect Size: 0.337 LCI: -0.385 UCI: 1.06 Weight: 0.557 Standard error: 0.368	
Taylor (1986)	The Development of Written Language Awareness: Environmental Aspects and Program Characteristics (<i>Reading Research Quarterly</i>)	Effect Size: 0.323 LCI: -0.035 UCI: 0.681 Weight: 0.767 Standard error: 0.183	
Stauffer (1966)	The effectiveness of language arts and basic reader approaches to first grade reading instruction (<i>The Reading Teacher</i>)	Effect Size: 0.319 LCI: 0.129 UCI: 0.509 Weight: 0.841 Standard error: 0.097	
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: 0.564 Standard error: 0.362	
Baker (2000)	When less may be more: A 2-year longitudinal evaluation of a volunteer tutoring program requiring minimal training (<i>Reading Research Quarterly</i>)	Effect Size: 0.284 LCI: -0.146 UCI: 0.714 Weight: 0.727 Standard error: 0.219	
Cleland (1964)	Comparison of the basal and the coordinated language experience approaches in first grade reading instruction. (NA)	Effect Size: 0.282 LCI: 0.106 UCI: 0.457 Weight: 0.845 Standard error: 0.09	
Sibieta (2016)	Nuffield Early Language Intervention: Evaluation report and executive summary (NA)	Effect Size: 0.267 LCI: 0.073 UCI: 0.461 Weight: 0.839 Standard error: 0.099	
McCallum (2011) OL	Improving reading comprehension of at-risk high-school students: The ART of reading program (<i>Psychology in the Schools</i>)	Effect Size: 0.234 LCI: -0.154 UCI: 0.621 Weight: 0.751 Standard error: 0.198	

Author	Title	Effect Size	Effect Size (Graph)
Nelson (2007) OL	Fostering the development of vocabulary knowledge and reading comprehension through contextually-based multiple meaning vocabulary instruction. (<i>Education and Treatment of Children</i>)	Effect Size: 0.23 LCI: -0.005 UCI: 0.465 Weight: 0.824 Standard error: 0.12	
Brimmer (2004)	Using thinking aloud procedures to promote reading comprehension of expository texts with intermediate grade level students (NA)	Effect Size: 0.211 LCI: -0.31 UCI: 0.732 Weight: 0.674 Standard error: 0.266	
Armstrong (2000)	The integration of reading vocabulary techniques with scientific terminology in a sixth-grade classroom (NA)	Effect Size: 0.21 LCI: -0.37 UCI: 0.79 Weight: 0.639 Standard error: 0.296	
Styles (2015)	Talk for Literacy: Evaluation Report and Executive Summary (NA)	Effect Size: 0.2 LCI: -0.016 UCI: 0.416 Weight: 0.832 Standard error: 0.11	
Piercy (1997)	The effects of multi-strategy instruction upon reading comprehension (NA)	Effect Size: 0.2 LCI: -0.094 UCI: 0.494 Weight: 0.798 Standard error: 0.15	
Sable (1987)	The Effects of Junior Great Books Literature Discussion on Reading Comprehension Achievement of Gifted Fifth Graders: Application of General Linear Model for Cross-Level Inferences (NA)	Effect Size: 0.2 LCI: -0.192 UCI: 0.592 Weight: 0.748 Standard error: 0.2	
Schetz (1994)	An Examination of Software Used with Enhancement for Preschool Discourse Skill Improvement (<i>Journal of Educational Computing Research</i>)	Effect Size: 0.188 LCI: -0.337 UCI: 0.713 Weight: 0.672 Standard error: 0.268	
Kux-Cox (1974)	A comparison of two instructional methods utilizing the cloze procedure and a more traditional method for improving reading comprehension and vocabulary in context in a disadvantaged fourth-grade elementary school sample. (NA)	Effect Size: 0.187 LCI: -0.393 UCI: 0.767 Weight: 0.639 Standard error: 0.296	
Aarnoutse (1997)	Improving Reading Comprehension Strategies through Listening (<i>Educational Studies</i>)	Effect Size: 0.166 LCI: -0.54 UCI: 0.872 Weight: 0.566 Standard error: 0.36	

Author	Title	Effect Size	Effect Size (Graph)
Lamb (1971)	The Language Experience Approach to Teaching Beginning Reading to Culturally Disadvantaged Pupils (NA)	Effect Size: 0.159 LCI: -0.096 UCI: 0.413 Weight: 0.816 Standard error: 0.13	
Lamb (1986)	The effects of a read-aloud program with language interaction (early childhood, preschool childrens literature) (NA)	Effect Size: 0.153 LCI: -0.773 UCI: 1.078 Weight: 0.452 Standard error: 0.472	
Jay (2017)	Dialogic Teaching: Evaluation report and executive summary (NA)	Effect Size: 0.15 LCI: 0 UCI: 0.3 Weight: 0.853 Standard error: 0.076	
Whitehurst (1994) OL	A Picture Book Reading Intervention in Day Care and Home for Children From Low-Income Families (Developmental Psychology)	Effect Size: 0.148 LCI: -0.421 UCI: 0.716 Weight: 0.646 Standard error: 0.29	
Baumann (2002)	Teaching Morphemic and Contextual Analysis to Fifth-Grade Students (Reading Research Quarterly)	Effect Size: 0.135 LCI: -0.471 UCI: 0.741 Weight: 0.624 Standard error: 0.309	
Hahn (1966)	Three Approaches to Beginning Reading Instruction: ITA, Language Arts and Basic Readers (The Reading Teacher)	Effect Size: 0.131 LCI: -0.243 UCI: 0.505 Weight: 0.758 Standard error: 0.191	
Lonigan (1999)	Effects of Two Shared-Reading Interventions on Emergent Literacy Skills of At-Risk Preschoolers (Journal of Early Intervention)	Effect Size: 0.126 LCI: -0.369 UCI: 0.622 Weight: 0.689 Standard error: 0.253	
Carriedo (1995) OL 1_2	Comprehension strategy training in content areas (European Journal of Psychology of Education)	Effect Size: 0.12 LCI: -0.272 UCI: 0.512 Weight: 0.748 Standard error: 0.2	
Reutzel (1994)	Oral Reading Instruction: The Impact on Student Reading Development (Reading Research Quarterly)	Effect Size: 0.119 LCI: -0.322 UCI: 0.561 Weight: 0.721 Standard error: 0.225	

Author	Title	Effect Size	Effect Size (Graph)
Jones (1984)	The effects of semantic mapping on vocabulary acquisition and reading comprehension of black inner city students (NA)	Effect Size: 0.116 LCI: -0.482 UCI: 0.715 Weight: 0.628 Standard error: 0.305	
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 (NA)	Effect Size: 0.114 LCI: -1.385 UCI: 1.612 Weight: 0.253 Standard error: 0.765	
Center (1997)	A trial evaluation of SWELL (Schoolwide Early Language and Literacy): a whole class early literacy program for at-risk and disadvantaged children (International Journal of Disability, Development and Education)	Effect Size: 0.114 LCI: -0.202 UCI: 0.43 Weight: 0.788 Standard error: 0.161	
Pollard-Durodola (2011)	The effects of an intensive shared book-reading intervention for preschool children at risk for vocabulary delay (Exceptional Children)	Effect Size: 0.099 LCI: -0.254 UCI: 0.451 Weight: 0.769 Standard error: 0.18	
Styles (2014)	Vocabulary Enrichment Intervention Programme: Evaluation report and executive summary (NA)	Effect Size: 0.06 LCI: -0.06 UCI: 0.18 Weight: 0.01 Standard error: 0.0612	
Bond (1967) OL	The cooperative research program in first-grade reading instruction (Reading Research Quarterly)	Effect Size: 0.059 LCI: -0.014 UCI: 0.131 Weight: 0.869 Standard error: 0.037	
Pace (1986)	A comparison of two methods of teaching fifth grade science vocabulary: An imagery method and a traditional science textbook method (NA)	Effect Size: 0.047 LCI: -0.263 UCI: 0.357 Weight: 0.791 Standard error: 0.158	
Aram (2006)	Early literacy interventions: The relative roles of storybook reading, alphabetic activities, and their combination (An Interdisciplinary Journal)	Effect Size: 0.04 LCI: -0.413 UCI: 0.492 Weight: 0.714 Standard error: 0.231	
Clarke (2010) OL	Ameliorating Childrens Reading-Comprehension Difficulties: A Randomized Controlled Trial (Psychological Science)	Effect Size: 0.032 LCI: -0.421 UCI: 0.485 Weight: 0.714 Standard error: 0.231	

Author	Title	Effect Size	Effect Size (Graph)
Bortnem (2005)	The effects of using non-fiction *interactive read -alouds on expressive and receptive vocabulary of preschool children (NA)	Effect Size: 0.019 LCI: -0.522 UCI: 0.56 Weight: 0.662 Standard error: 0.276	
Block (2006)	The effects of powerful vocabulary for reading success on students' reading vocabulary and comprehension achievement (NA)	Effect Size: 0.018 LCI: -0.14 UCI: 0.176 Weight: 0.851 Standard error: 0.08	
Jackson (1963)	Intensive Vocabulary Training (Journal of Developmental Reading)	Effect Size: 0.01 LCI: -0.575 UCI: 0.594 Weight: 0.637 Standard error: 0.298	
McKeown (2009) OL 1_1	Rethinking Reading Comprehension Instruction: A Comparison of Instruction for Strategies and Content Approaches (Reading Research Quarterly)	Effect Size: 0.004 LCI: -0.433 UCI: 0.44 Weight: 0.724 Standard error: 0.223	
Phillips (1990) OL	Effect of early literacy intervention on kindergarten achievement (NA)	Effect Size: -0.004 LCI: -0.317 UCI: 0.309 Weight: 0.789 Standard error: 0.16	
Reznitskya (2002)	The influence of group discussions and explicit instruction on the acquisition and transfer of argumentative knowledge (NA)	Effect Size: -0.014 LCI: -0.606 UCI: 0.577 Weight: 0.632 Standard error: 0.302	
Kitmitto (2018)	Thinking, Doing, Talking Science - Effectiveness trial-Evaluation report and executive summary (NA)	Effect Size: -0.022 LCI: -0.066 UCI: 0.021 Weight: 0.872 Standard error: 0.022	
Gallagher (1975)	Vocabulary Retention of Lower-Class Students in Language Experience and in Basal Text Approaches to the Teaching of Reading (NA)	Effect Size: -0.024 LCI: -0.574 UCI: 0.526 Weight: 0.657 Standard error: 0.281	
Gorard (2015)	Philosophy for Children: Evaluation report and executive summary (NA)	Effect Size: -0.026 LCI: -0.1 UCI: 0.048 Weight: 0.869 Standard error: 0.038	

Author	Title	Effect Size	Effect Size (Graph)
Thurston (2016)	Talk of the Town: Evaluation report and executive summary (NA)	Effect Size: -0.036 LCI: -0.112 UCI: 0.04 Weight: 0.868 Standard error: 0.039	
Crain-Thoreson (1999) OL	Enhancing Linguistic Performance: Parents and Teachers as Book Reading Partners for Children with Language Delays (Topics in Early Childhood Special Education)	Effect Size: -0.039 LCI: -0.889 UCI: 0.811 Weight: 0.489 Standard error: 0.434	
Hanley (2015)	Thinking Doing Talking Science: Evaluation report and executive summary (NA)	Effect Size: -0.043 LCI: -0.143 UCI: 0.058 Weight: 0.864 Standard error: 0.051	
Simon (2003)	Storybook activities for improving language: Effects on language and literacy outcomes in Head Start preschool classrooms (NA)	Effect Size: -0.057 LCI: -0.659 UCI: 0.545 Weight: 0.626 Standard error: 0.307	
Lonigan (1998)	Relative efficacy of parent and teacher involvement in a shared-reading intervention for preschool children from low-income backgrounds (Early Childhood Research Quarterly)	Effect Size: -0.107 LCI: -0.623 UCI: 0.409 Weight: 0.677 Standard error: 0.263	
Hargrave (2000)	A Book Reading Intervention with Preschool Children Who Have Limited Vocabularies: The Benefits of Regular Reading and Dialogic Reading (Early Childhood Research Quarterly)	Effect Size: -0.112 LCI: -0.853 UCI: 0.63 Weight: 0.546 Standard error: 0.378	
Thames (1986)	Effects of prereading vocabulary strategies on vocabulary and comprehension of basal stories by primary children (NA)	Effect Size: -0.117 LCI: -0.709 UCI: 0.475 Weight: 0.632 Standard error: 0.302	
Styles (2014)	Chatterbooks: Evaluation report and executive summary (NA)	Effect Size: -0.14 LCI: -0.311 UCI: 0.031 Weight: 0.847 Standard error: 0.087	
Kranzer (1988) OL	A study of the effects of instruction on incidental word learning and on the ability to derive word meanings from context (Dissertation Abstracts International)	Effect Size: -0.179 LCI: -0.726 UCI: 0.368 Weight: 0.659 Standard error: 0.279	

Author	Title	Effect Size	Effect Size (Graph)
Morrow (1990)	Effects of a story reading program on the literacy development of at-risk kindergarten children <i>(Journal of Reading Behavior)</i>	Effect Size: -0.18 LCI: -0.679 UCI: 0.319 Weight: 0.687 Standard error: 0.255	
Nash (2006)	Teaching new words to children with poor existing vocabulary knowledge a controlled evaluation of the definition and context methods <i>(International Journal of Language & Communication Disorders)</i>	Effect Size: -0.196 LCI: -0.999 UCI: 0.606 Weight: 0.513 Standard error: 0.409	
Mautte (1990)	The effects of adult-interactive behaviors within the context of repeated storybook readings upon the language development and selected prereading skills of prekindergarten at risk students <i>(NA)</i>	Effect Size: -0.246 LCI: -0.885 UCI: 0.394 Weight: 0.604 Standard error: 0.326	
Aarnoutse (1998)	Effects of Listening Comprehension Training on Listening and Reading <i>(The Journal of Special Education)</i>	Effect Size: -0.247 LCI: -0.834 UCI: 0.34 Weight: 0.635 Standard error: 0.3	
Puhalla (2005)	Teaching vocabulary from narrative and information text: Examining the effects of instructional intensity and judicious review on the vocabulary and expressive language performance of first -grade children at -risk of early reading difficulties <i>(NA)</i>	Effect Size: -0.247 LCI: -0.841 UCI: 0.346 Weight: 0.631 Standard error: 0.303	
Maxwell (2015)	Oracy Curriculum, Culture and Assessment Toolkit: Evaluation report and executive summary <i>(NA)</i>	Effect Size: -0.318 LCI: -0.959 UCI: 0.322 Weight: 0.604 Standard error: 0.327	
Allinder (2001) OL	Improving fluency in at-risk readers and students with learning disabilities <i>(Remedial and Special Education)</i>	Effect Size: -0.323 LCI: -0.924 UCI: 0.278 Weight: 0.627 Standard error: 0.306	
Kendrick (1966)	A comparative study of two first-grade language arts programs <i>(Reading Research Quarterly)</i>	Effect Size: -0.339 LCI: -0.448 UCI: -0.23 Weight: 0.862 Standard error: 0.056	
Hedin (2008)	The effects of thinking aloud on the comprehension and monitoring of sixth graders <i>(NA)</i>	Effect Size: -0.457 LCI: -1.065 UCI: 0.151 Weight: 0.623 Standard error: 0.31	

Author	Title	Effect Size	Effect Size (Graph)
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: -0.468 LCI: -1.221 UCI: 0.286 Weight: 0.54 Standard error: 0.384	
Feitelson (1986)	Effects of Listening to Series Stories on First Graders Comprehension and Use of Language <i>(Research in the Teaching of English)</i>	Effect Size: -0.584 LCI: -1.03 UCI: -0.138 Weight: 0.718 Standard error: 0.228	
Walsh (2009)	Novel word learning of preschoolers enrolled in Head Start regular and bilingual classrooms: Impact of adult vocabulary noneliciting questions during shared storybook reading <i>(NA)</i>	Effect Size: -0.604 LCI: -1.338 UCI: 0.13 Weight: 0.55 Standard error: 0.375	
Carrigan (1986)	Reading achievement of grade one students involved in language experience programs vs. basal leader programs <i>(National Reading Conference)</i>	Effect Size: -0.88 LCI: -1.719 UCI: -0.04 Weight: 0.494 Standard error: 0.428	