What Works Clearinghouse

ies INSTITUTE OF EDUCATION SCIENCES

Dialogic Reading

Program Description[1]

Dialogic reading is an interactive shared picture-book reading practice designed to enhance young children's language and literacy skills. During the shared reading practice, the adult and the child switch roles so that the child learns to become the storyteller with the assistance of the adult, who functions as an active listener and questioner.

Research[2]

Two studies of dialogic reading that fall within the scope of the Early Childhood Education Interventions for Children with Disabilities review protocol meet What Works Clearinghouse (WWC) evidence standards. The two studies included 52 students with language delays, from ages three to six, participating in early childhood programs in the Pacific Northwest.[3] Both studies examined intervention effects on children's communication and language competencies.

Based on these two studies, the WWC considers the extent of evidence for dialogic reading to be small for communication and language competencies for children with disabilities. No studies that meet WWC evidence standards with or without reservations examined the effectiveness of dialogic reading for children with disabilities in the domains of cognitive development, literacy, math competencies, social-emotional development and behavior, functional abilities, or physical well-being.

Effectiveness

Dialogic reading was found to have potentially positive effects on communication and language competencies for children with disabilities.

1. Dialogic reading does not have a single developer or official description. The descriptive information for this program was adapted from publicly available sources: descriptions of this practice (see the websites listed under Additional Program Information) and research articles. This practice also is reviewed in the WWC intervention report for the general population as part of the Early Childhood Education topic area. Two related practices are reviewed in the Early Childhood Education WWC intervention reports on *Interactive Shared Book Reading* and *Shared Book Reading*.
2. The studies in this report were reviewed using WWC Evidence Standards, Version 2.0 (see the WWC Procedures and Standards Handbook, Chapter III).
3. The evidence presented in this report is based on available research. Findings and conclusions may change as new research becomes available.

Effectiveness *(continued)*

	Cognitive development	Communication/ language competencies	Literacy	Math competencies	Social- emotional development/ behavior	Functional abilities	Physical well-being
Rating of effectiveness	na	Potentially positive effects	na	na	na	na	na
Improvement index[4]	na	Average: +11 percentile points	na	na	na	na	na
	na	Range: −2 to +45 percentile points	na	na	na	na	na

na = not applicable

Additional program information

Developer and contact

Dialogic reading is a practice that does not have a single developer responsible for providing information or materials. However, readers interested in using dialogic reading practices in their classrooms can refer to sources available through Internet searches for information. A list of examples follows, although these sources have not been reviewed or endorsed by the WWC:

- Pearson School: http://www.pearsonschool.com/index.cfm?locator=PSZ16i&PMDbSiteId=2781&PMDbSolutionId=6724&PMDbSubSolutionId=6733&PMDbCategoryId=3289&PMDbProgramId=22109&level=4
- Committee for Children: http://www.cfchildren.org/programs/ww/overview/
- Reading Rockets: http://www.pbs.org/launchingreaders/rootsofreading/meettheexperts_2.html
- American Library Association: http://www.ala.org/ala/mgrps/divs/alsc/ecrr/index.cfm
- Washington Learning Systems: http://www.walearning.com/language/dialogic-reading/

Scope of use

Dialogic reading was created in the 1980s, and the first published study appeared in 1988 (Whitehurst et al., 1988).[5]

Information on the number or demographics of children or centers using this intervention is not available.

Teaching

Dialogic reading can be used by teachers and other adults with children individually or in small groups. Adults can be trained in the principles of dialogic reading through video followed by role-playing and group discussion. While reading books with the child, the adult uses five types of prompts (forming the acronym "CROWD"):

- **C**ompletion: The child fills in the blank at the end of a sentence.
- **R**ecall: The adult asks questions about a book the child has read.
- **O**pen-ended: The adult encourages the child to tell what is happening in a picture.
- **W**h-: The adult asks *wh-* questions about the pictures in the books.
- **D**istancing: The adult relates pictures and words in the book to the child's own experiences outside the book.

Children should be allowed sufficient time to respond to questions and prompts.

4. These numbers show the average and range of student-level improvement indices for all findings across the studies.
5. Whitehurst, G. J., Falco, F. L., Lonigan, C. J., Fischel, J. E., DeBaryshe, B. D., Valdez-Menchaca, M. C., & Caulfield, M. (1988). Accelerating language development through picture book reading. *Developmental Psychology, 24*(4), 552–559.

These prompts are used by the adult in a reading technique called PEER. The adult does the following:

- **P**rompts the child to say something about the book
- **E**valuates the response
- **E**xpands the child's response
- **R**epeats the prompt

As the child becomes increasingly familiar with a book, the adult reads less, listens more, and gradually uses higher level prompts to encourage the child to progress beyond naming the objects in the pictures to thinking more about what is happening in the pictures and how this relates to the child's own experiences.

Cost

Published dialogic reading procedures are freely available to the public. Information is not available about the costs of training for and implementation of dialogic reading.

Research

Fifty-nine studies reviewed by the WWC investigated the effects of dialogic reading on children with disabilities. Two studies (Crain-Thoreson & Dale, 1999; Dale, Crain-Thoreson, Notari-Syverson, & Cole, 1996) are randomized controlled trials that meet WWC evidence standards. The remaining 57 studies do not meet either WWC evidence standards or eligibility screens.

Meets evidence standards

Comparisons meeting evidence standards in Crain-Thoreson and Dale (1999) included 19 three- to five-year-old children with mild to moderate language delays from five classrooms in three school districts in the Pacific Northwest. This study compared two intervention groups—a staff-implemented dialogic reading group and a parent-implemented dialogic reading group—to a comparison group that did not receive one-on-one dialogic reading. This report focuses on the comparison of communication and language outcomes between the parent-implemented group and the no-treatment comparison group. The comparison between the staff-implemented group and the no-treatment comparison group did not meet evidence standards because of high differential attrition and lack of baseline equivalence and is excluded from this report.[6]

Dale et al. (1996) included 33 three- to six-year-old children with mild to moderate language delays from early childhood education programs at the University of Washington. This study compared communication and language outcomes for children whose mothers were trained in and asked to implement dialogic reading with those for children whose mothers were trained in and asked to implement the *Conversational Language Training Program*, an intervention which is similar to dialogic reading in its emphasis on an interactive style of communication with children but does not involve book reading.

Extent of evidence

The WWC categorizes the extent of evidence in each domain as small or medium to large (see the WWC Procedures and Standards Handbook, Appendix G). The extent of evidence takes into account the number of studies and the total sample size across the studies that meet WWC evidence standards with or without reservations.[7]

6. The Crain-Thoreson and Dale (1999) study was previously reviewed in the WWC's intervention report on dialogic reading as part of the Early Childhood Education (ECE) review of interventions for the general population. Results pertaining to the parent-implemented dialogic reading group were excluded from the previous review, because the ECE review focused exclusively on center-based interventions. In the previous review (based on WWC Version 1.0 study attrition standards), the WWC downgraded the Crain-Thoreson and Dale (1999) study, because differential attrition between the staff-implemented dialogic reading and the comparison group was high.
7. The extent of evidence categorization was developed to tell readers how much evidence was used to determine the intervention rating, focusing on the number and size of studies. Additional factors associated with a related concept–external validity, such as the students' demographics and the types of settings in which studies took place–are not taken into account for the categorization. Information about how the extent of evidence rating was determined for dialogic reading is in Appendix A5.

The WWC considers the extent of evidence for dialogic reading to be small for communication and language competencies for children with disabilities. No studies that meet WWC evidence standards with or without reservations examined the effectiveness of dialogic reading for children with disabilities in the domains of cognitive development, literacy, math competencies, social-emotional development and behavior, functional abilities, or physical well-being.

Effectiveness

Findings

The WWC review of interventions for Early Childhood Education Interventions for Children with Disabilities addresses student outcomes in seven domains: cognitive development, communication and language competencies, literacy, math competencies, social-emotional development and behavior, functional abilities, and physical well-being. The studies included in this report cover one domain: communication and language competencies. The findings below present the authors' estimates and WWC-calculated estimates of the size and the statistical significance of the effects of dialogic reading on children with disabilities.[8]

Communication and language competencies. Two studies examined outcomes in the domain of communication and language competencies for children with disabilities; one of these showed statistically significant positive effects, according to WWC criteria.[9]

Crain-Thoreson and Dale (1999) analyzed group differences for dialogic reading implemented by a parent and a comparison group. The authors did not find statistically significant differences between the parent-led intervention and the comparison group on any of the measures. The WWC did not find statistically significant differences on any measure, and the average effect was not large enough to be called substantively important and positive, according to WWC criteria (that is, at least 0.25).

Dale et al. (1996) found a statistically significant difference favoring children in the dialogic reading group on lexical diversity, but no statistically significant differences between groups on measures of mean length utterance and number of child utterances.[10] The authors combined measures taken during a book-reading activity and a play activity, but the WWC separated outcomes by type of activity (book-reading or play) to calculate group differences on six outcomes. According to WWC calculations, there were statistically significant differences between the intervention and comparison groups on two of the six measures (lexical diversity during the play activity and total number of utterances during the book-reading activity).

Rating of effectiveness

The WWC rates the effects of an intervention in a given outcome domain as positive, potentially positive, mixed, no discernible effects, potentially negative, or negative. The rating of effectiveness takes into account four factors: the quality of the research design, the statistical significance of the findings, the size of the difference between participants in the intervention and the comparison conditions, and the consistency in findings across studies (see the WWC Procedures and Standards Handbook, Appendix E).

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8. The level of statistical significance was reported by the study authors or, when necessary, calculated by the WWC to correct for clustering within classrooms or schools and for multiple comparisons. For an explanation, see the WWC Tutorial on Mismatch. For the formulas the WWC used to calculate the statistical significance, see WWC Procedures and Standards Handbook, Appendix C for clustering and WWC Procedures and Standards Handbook, Appendix D for multiple comparisons. For the dialogic reading studies summarized here, no corrections for clustering were needed; however, corrections for multiple comparisons were needed, so the significance levels may differ from those reported in the original studies.
9. Process-oriented outcomes measuring the children's engagement in the tasks—called "partic" in Crain-Thoreson and Dale (1999) and "verbal engagement" or "total engagement" in Dale et al. (1996)—are excluded from this report.
10. The study also did not find a statistically significant difference on verbal engagement, which the WWC considers a process-oriented outcome and excludes from the review.

<div style="color:green; font-weight:bold; text-align:right">The WWC found dialogic reading to have potentially positive effects for communication and language competencies for children with disabilities</div>

Improvement index

The WWC computes an improvement index for each individual finding. In addition, within each outcome domain, the WWC computes an average improvement index for each study and an average improvement index across studies (see WWC Procedures and Standards Handbook, Appendix F). The improvement index represents the difference between the percentile rank of the average student in the intervention condition and the percentile rank of the average student in the comparison condition. Unlike the rating of effectiveness, the improvement index is entirely based on the size of the effect, regardless of the statistical significance of the effect, the study design, or the analysis. The improvement index can take on values between –50 and +50, with positive numbers denoting favorable results for the intervention group.

The average improvement index for communication and language competencies for children with disabilities is +11 percentile points across the two studies, with a range of –2 to +45 percentile points across findings.

Summary

The WWC reviewed 59 studies on the use of dialogic reading for children with disabilities. Two studies meet WWC evidence standards; the remaining 57 studies do not meet either WWC evidence standards or eligibility screens. Based on the two studies, the WWC found potentially positive effects of dialogic reading on communication and language competencies for children with disabilities. The conclusions presented in this report may change as new research emerges.

References

Meets WWC evidence standards

Crain-Thoreson, C., & Dale, P. S. (1999). Enhancing linguistic performance: Parents and teachers as book reading partners for children with language delays. *Topics in Early Childhood Special Education, 19*(1), 28–39.

Dale, P. S., Crain-Thoreson, C., Notari-Syverson, A., & Cole, K. (1996). Parent-child book reading as an intervention technique for young children with language delays. *Topics in Early Childhood Special Education, 16*(2), 213–235.

Studies that fall outside the Early Childhood Education Interventions for Children with Disabilities review protocol or do not meet WWC evidence standards

Arnold, D., Lonigan, C., Whitehurst, G., & Epstein, J. (1994). Accelerating language development through picture book reading: Replication and extension to a videotape training format. *Journal of Educational Psychology, 86*(2), 235–243. The study is ineligible for review because it does not use a sample aligned with the protocol.

Arnold, D. H. (1993). Accelerating language development through picture book reading: Replication and extension to a videotape training format. (Doctoral dissertation, State University of New York at Stony Brook, 1993). *Dissertation Abstracts International, 54*(10B). The study is ineligible for review because it does not use a sample aligned with the protocol.

Arnold, D. S., & Whitehurst, G. J. (1994). Accelerating language development through picture book reading: A summary of dialogic reading and its effect. In D. K. Dickinson (Ed.), *Bridges to literacy: Children, families, and schools* (pp. 103–128). Malden, MA: Blackwell Publishing. The study is ineligible for review because it is not a primary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.

Blom-Hoffman, J., O'Neil-Pirozzi, T., Volpe, R., Cutting, J., & Bissinger, E. (2007). Instructing parents to use dialogic reading strategies with preschool children: Impact of a video-based training program on caregiver reading behaviors and children's related verbalizations. *Journal of Applied School*

Psychology, 23(1), 117–131. The study is ineligible for review because it does not use a sample aligned with the protocol.

Branscum, E. (1998). *The effects of the presentation of compound stimuli on language acquisition during dialogic reading sessions.* Unpublished master's thesis, California State University–Stanislaus, Turlock, CA. The study is ineligible for review because it does not use a sample aligned with the protocol.

Brickman, S. O. (2002). Effects of a joint book reading strategy on Even Start. (Doctoral dissertation, University of Oklahoma, 2002). *Dissertation Abstracts International, 63*(12A). 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.

Briesch, A. M., Chafouleas, S. M., Lebel, T. J., & Blom-Hoffman, J. A. (2008). Impact of videotaped instruction in dialogic reading strategies: An investigation of caregiver implementation integrity. *Psychology in the Schools, 45*(10), 978–993. The study is ineligible for review because it does not examine the effectiveness of an intervention.

Canning, P. L. (2002). Picture book intervention to facilitate language production in monolingual Spanish-speaking children. (Doctoral dissertation, University of Denver, 2002). *Dissertation Abstracts International, 63*(12A). The study is ineligible for review because it does not examine an intervention implemented in a way that falls within the scope of the review.

Chambers, B., Cheung, A. C. K., & Slavin, R. E. (2006). Effective preschool programs for children at risk of school failure: A best-evidence synthesis. In B. Spodek & O. N. Saracho (Eds.), *Handbook of research on the education of young children, 2nd edition* (pp. 347–359). Mahwah, NJ: Lawrence Erlbaum Associates. The study is ineligible for review because it is not a primary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.

Chow, B. W., & McBride-Chang, C. (2003). Promoting language and literacy development through parent-child reading in Hong Kong preschoolers. *Early Education and Development, 14*(2), 233–248. The study is ineligible for review because it does not use a sample aligned with the protocol.

Chow, B. W., McBride-Chang, C., Cheung, H., & Chow, C. S. L. (2008). Dialogic reading and morphology training in Chinese children: Effects on language and literacy. *Developmental Psychology, 44*(1), 233–244. The study is ineligible for review because it does not use a sample aligned with the protocol.

Chow, W. (2005). *Enhancing children's reading ability and vocabulary growth through dialogic reading and morphology training.* Unpublished master's thesis, Chinese University of Hong Kong, Hong Kong. The study is ineligible for review because it does not use a sample aligned with the protocol.

Collins, K. A. (1995). *Language development and dialogic reading with at-risk children.* Unpublished honors paper, Florida State University, Tallahassee, FL. This study is ineligible because it does not use a sample within the age or grade range specified in the protocol.

Cronan, T. A., Cruz, S. G., Arriaga, R. I., & Sarkin, A. J. (1996). The effects of a community-based literacy program on young children's language and conceptual development. *American Journal of Community Psychology, 24*(2), 251–272. The study is ineligible for review because it does not use a sample aligned with the protocol.

Cronkleton, R. K. (1997). *Dialogic picture book reading: An early intervention strategy for language remediation.* Unpublished master's project, University of Dayton, Dayton, OH. The study is ineligible for review because it does not use a comparison group.

Davis, S. E. (2004). An enhanced dialogic reading approach to facilitate typically developing pre-school children's emergent literacy skills. (Master's thesis, East Tennessee State University, 2004). *Masters Abstracts International, 42*(05). The study is ineligible for review because it does not use a comparison group.

Domack, A. M. (2005). *The effect of a dialogic reading intervention on the emergent literacy skills of preschool students.*

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Unpublished master's thesis, University of Nebraska at Omaha, Omaha, NE. The study is ineligible for review because it does not use a sample aligned with the protocol.

Duran, L. K. (2008). An analysis of verbal interactions during dialogic reading with Spanish-speaking children enrolled in a Head Start home visiting program. (Doctoral dissertation, University of Minnesota, 2008). *Dissertation Abstracts International, 69*(01A). The study is ineligible for review because it does not use a comparison group.

Elias, G., Hay, I., Homel, R., & Freiberg, K. (2006). Enhancing parent-child book reading in a disadvantaged community. *Australian Journal of Early Childhood, 31*(1), 20–25. The study is ineligible for review because it does not use a comparison group.

Epstein, J. N. (1994). Accelerating the literacy development of disadvantaged preschool children: An experimental evaluation of a Head Start emergent literacy curriculum. (Doctoral dissertation, State University of New York at Stony Brook, 1994). *Dissertation Abstracts International, 55*(11B). The study is ineligible for review because it does not use a sample aligned with the protocol.

Fielding-Barnsley, R., & Purdie, N. (2002). Developing pre-literacy skills via shared book reading: The assessment of a family intervention program for preschool children at risk of becoming reading disabled. *Australian Journal of Learning Disabilities, 7*(3), 13–19. The study is ineligible for review because it does not use a sample aligned with the protocol.

Fielding-Barnsley, R., & Purdie, N. (2003). Early intervention in the home for children at risk of reading failure. *Support for Learning, 18*(2), 77–82. The study is ineligible for review because it does not use a sample aligned with the protocol.

Fries-Dias, C. M. (1993). Picture book reading to enhance vocabulary acquisition. (Master's thesis, University of the Pacific, 1993). *Masters Abstracts International, 32*(02). The study is ineligible for review because it does not use a sample aligned with the protocol.

Fung, P. C., Chow, B. W. Y., & McBride-Chang, C. (2005). The impact of a dialogic reading program on deaf and hard-of-hearing kindergarten and early primary school–aged students in Hong Kong. *Journal of Deaf Studies & Deaf Education, 10*(1), 82–95. The study is ineligible for review because it does not use a sample aligned with the protocol.

Gregory, A. E. (2002). Constructing meaning: Kindergarten children's textual importations following dialogic reading intervention. (Doctoral dissertation, Purdue University, 2002). *Dissertation Abstracts International, 64*(07A). The study is ineligible for review because it does not use a comparison group.

Hargrave, A. C., & Senechal, M. (2000). A book reading intervention with preschool children who have limited vocabularies: The benefits of regular reading and dialogic reading. *Early Childhood Research Quarterly, 15*(1), 75–90. The study is ineligible for review because it does not take place in the geographic area specified in the protocol.

Huebner, C. E. (2000). Community-based support for preschool readiness among children in poverty. *Journal of Education for Students Placed at Risk, 5*(3), 291–314. The study is ineligible for review because it does not use a sample aligned with the protocol.

Huebner, C. E. (2000). Promoting toddlers' language development through community-based intervention. *Journal of Applied Developmental Psychology, 21*(5), 513–535. The study is ineligible for review because it does not examine an intervention implemented in a way that falls within the scope of the review.

Huebner, C. E., & Meltzoff, A. N. (2005). Intervention to change parent-child reading style: A comparison of instructional methods. *Journal of Applied Developmental Psychology, 26*(3), 296–313. The study is ineligible for review because it does not examine an intervention implemented in a way that falls within the scope of the review.

Janson, J. E. (2006). *What impact does a collaborative reading comprehension program have on emerging literacy skills of preschool students?* Unpublished master's thesis, Hamline University, Saint Paul, MN. The study is ineligible for review because it does not use a comparison group.

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Jiménez, T. C., Filippini, A. L., & Gerber, M. M. (2006). Shared reading within Latino families: An analysis of reading interactions and language use. *Bilingual Research Journal, 30*(2), 431–452. The study is ineligible for review because it does not use a comparison group.

Joye, E. W. (2007). A psychometric examination of the dialogic reading observation form in a sample of English and Spanish speaking caregivers. (Doctoral dissertation, University of Denver, 2007). *Dissertation Abstracts International, 68*(11A). The study is ineligible for review because it does not examine the effectiveness of an intervention.

Justice, L. M. (2006). *Clinical approaches to emergent literacy intervention.* San Diego, CA: Plural Publishing. The study is ineligible for review because it is not a primary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.

Kelley, C. P. (2003). *Dialogic reading: When a picture is worth a thousand words.* Unpublished master's thesis, Bank Street College of Education, New York, NY. The study is ineligible for review because it does not use a comparison group.

Kirkpatrick, A. (2003). *A dialogic reading intervention programme for parents and young children.* Sheffield, UK: Sure Start Foxhill & Parson Cross. The study is ineligible for review because it does not use a comparison group.

Kotaman, H. (2007). Turkish parents' dialogical storybook reading experiences: A phenomenological study. *Journal of Instructional Psychology, 34*(4), 200–206. The study is ineligible for review because it does not use a comparison group.

Kotaman, H. (2008). Impacts of dialogical storybook reading on young children's reading attitudes and vocabulary development. *Reading Improvement, 45*(2), 55–61. The study is ineligible for review because it does not use a sample aligned with the protocol.

Lonigan, C. J., & Whitehurst, G. J. (1998). Relative efficacy of parent and teacher involvement in a shared-reading intervention for preschool children from low-income backgrounds. *Early Childhood Research Quarterly, 13*(2), 263–290. The study is ineligible for review because it does not use a sample aligned with the protocol.

Lonigan, C. J., Anthony, J. L., Bloomfield, B. G., Dyer, S. M., & Samwel, C. S. (1999). Effects of two shared-reading interventions on emergent literacy skills of at-risk preschoolers. *Journal of Early Intervention, 22*(4), 306–322. The study is ineligible for review because it does not use a sample aligned with the protocol.

Mol, S. E., Bus, A. G., de Jong, M. T., & Smeets, D. J. H. (2008). Added value of dialogic parent-child book readings: A meta-analysis. *Early Education and Development, 19*(1), 7–26. The study is ineligible for review because it is not a primary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.

Murphy, M. M. (2007). Enhancing print knowledge, phonological awareness, and oral language skills with at-risk preschool children in Head Start classrooms. (Doctoral dissertation, University of Nebraska, Lincoln, 2007). *Dissertation Abstracts International, 68*(06A). The study is ineligible for review because it does not use a sample aligned with the protocol.

Needlman, R., & Zuckerman, B. (1993). *Pediatric interventions to promote picture book use.* Paper presented at the biennial meeting of the Society for Research in Child Development, New Orleans, LA. The study is ineligible for review because it does not examine an intervention implemented in a way that falls within the scope of the review.

Park, J. Y. K. (2006). Facilitating young children's second language development through picture book sharing. (Doctoral dissertation, University of Kansas, 2006). *Dissertation Abstracts International, 67*(01A). The study is ineligible for review because it does not examine an intervention implemented in a way that falls within the scope of the review.

Sabbatini, H. L. (2001). *The effects of dialogic reading on the early reading abilities of preschoolers.* Unpublished master's thesis, University of Arkansas for Medical Sciences, Little Rock, AR. The study is ineligible for review because it does not use a sample aligned with the protocol.

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Scarborough, H. S., & Dobrich, W. (1994). On the efficacy of reading to preschoolers. *Developmental Review, 14*(3), 245–302. The study is ineligible for review because it is not a primary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.

Sherman-Brewer, N. (2004). Literacy enrichment and achievement through parental support: The effects of parent-delivered, home-based storybook reading on the early literacy skills of kindergarten children from low-income families who are at-risk of reading difficulties. (Doctoral dissertation, University of Oregon, Eugene, 2004). *Dissertation Abstracts International, 65(*06A). The study is ineligible for review because it does not use a sample aligned with the protocol.

Sybesma, T. K. (2001). *A bridge to literacy: Dialogic storybook reading during dyadic storybook reading episodes.* Unpublished master's thesis, Bethel College, St. Paul, MN. The study is ineligible for review because it does not use a comparison group.

Trivette, C. M., & Dunst, C. J. (2007). Relative effectiveness of dialogic, interactive, and shared reading interventions. *CELLreviews, 1*(2), 1–12. The study is ineligible for review because it is not a primary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.

Valdez-Menchaca, M. C., & Whitehurst, G. J. (1992). Accelerating language development through picture book reading: A systematic extension to Mexican day care. *Developmental Psychology, 28*(6), 1106–1114. The study is ineligible for review because it does not use a sample aligned with the protocol.

Wasik, B. A., & Bond, M. A. (2001). Beyond the pages of a book: Interactive book reading and language development in preschool classrooms. *Journal of Educational Psychology, 93*(2), 243–250. The study is ineligible for review because it does not use a sample aligned with the protocol.

Whitehurst, G. J., Arnold, D. S., Epstein, J. N., Angell, A. L., Smith, M., & Fischel, J. E. (1994). A picture book reading intervention in day care and home for children from low-income families. *Developmental Psychology, 30*(5), 679–689. The study is ineligible for review because it does not use a sample aligned with the protocol.

Whitehurst, G. J., Epstein, J. N., Angell, A. L., Payne, A. C., Crone, D. A., & Fischel, J. E. (1994). Outcomes of an emergent literacy intervention in Head Start. *Journal of Educational Psychology, 86*(4), 542–555. The study is ineligible for review because it does not use a sample aligned with the protocol.

Whitehurst, G. J., Falco, F. L., Lonigan, C. J., Fischel, J. E., DeBaryshe, B. D., Valdez-Menchaca, M. C., et al. (1988). Accelerating language development through picture book reading. *Developmental Psychology, 24*(4), 552–559. The study is ineligible for review because it does not use a sample aligned with the protocol.

Whitehurst, G. J., Zevenbergen, A. A., Crone, D. A., Schultz, M. D., Velting, O. N., & Fischel, J. E. (1999). Outcomes of an emergent literacy intervention from Head Start through second grade. *Journal of Educational Psychology, 91*(2), 261–272. The study is ineligible for review because it does not use a sample aligned with the protocol.

Wilhjelm, K. N. (2004). Contexts for facilitating emergent literacy in typically developing preschoolers. (Master's thesis, East Tennessee State University, 2004). *Masters Abstracts International, 42*(05). The study is ineligible for review because it does not use a sample aligned with the protocol.

Zevenbergen, A. A., Whitehurst, G. J., & Zevenbergen, J. A. (2003). Effects of a shared-reading intervention on the inclusion of evaluative devices in narratives of children from low-income families. *Journal of Applied Developmental Psychology, 24*(1), 1–15. The study is ineligible for review because it does not use a sample aligned with the protocol.

Zevenbergen, A. A., Whitehurst, G. J., Payne, A. C., Crone, D. A., Hiscott, M. D., Nania, O. C., et al. (1997). Outcomes of an emergent literacy intervention in Head Start homes and classrooms. *NHSA Research Quarterly, 1*(1), 137–147. The study is ineligible for review because it does not use a sample aligned with the protocol.

Appendix

Appendix A1.1   Study characteristics: Crain-Thoreson & Dale, 1999[1] (randomized controlled trial)

Characteristic	Description
Study citation	Crain-Thoreson, C., & Dale, P. S. (1999). Enhancing linguistic performance: Parents and teachers as book reading partners for children with language delays. *Topics in Early Childhood Special Education, 19*(1), 28–39.
Participants	The study began with 37 children. All children were eligible for early childhood special-education services and had mild to moderate language delays. Based on pretest scores, triads of children with similar receptive vocabulary scores were formed within each district. Within each triad, one member was randomly assigned to a parent dialogic reading group, one member was assigned to a staff dialogic reading group, and one was assigned to a control condition. Thirteen children were assigned to the staff-implemented group, which was not included in this review, and five more children did not complete the study, leaving 19 children remaining in the sample. The mean age of all the children who completed the study was 51.6 months (ranging from 39 to 66 months), and 31.3% of these children were female.[2] The mean age of children in the sample included in this review was 50.5 months.
Setting	The study took place in five classrooms in five schools in three school districts in the Pacific Northwest. Children attended publicly funded preschool programs that provided early intervention for children with special needs.
Intervention	The study included two intervention groups: one in which program staff implemented dialogic reading, and another in which parents implemented dialogic reading. The comparison between the staff-implemented group and the no-treatment comparison group did not meet evidence standards because of high differential attrition and lack of baseline equivalence and is excluded from this report. Dialogic reading was implemented over an eight-week period, during which staff or parents engaged in book reading with individual children at least four times per week.
Comparison	Children in the control group did not participate in dialogic reading. They participated in group story time, which was the standard practice.
Primary outcomes and measurement	The primary outcome domain was children's communication and language competencies, measured by three nonstandardized measures and two standardized measures. The nonstandardized measures included mean length of utterances, number of utterances, and number of different words used (lexical diversity). Children's vocabulary knowledge was measured by two standardized tests: the Peabody Picture Vocabulary Test–Revised and the Expressive One-Word Picture Vocabulary Test–Revised. For a more detailed description of these outcome measures, see Appendix A2.
Staff/teacher/parent training	Parents were trained in the dialogic reading program during two 90-minute instructional sessions held four weeks apart. Videotape training, live demonstration, and role-play were used during the training. Handouts summarizing the training components were provided to parents. The researchers modified the parent training program to address the needs of students with language delays by teaching parents to pause and give their children time to respond.

1. The Crain-Thoreson and Dale (1999) study was previously reviewed for the WWC's intervention report on dialogic reading conducted as part of the Early Childhood Education (ECE) review of interventions for the general population. The parent-implemented intervention group was excluded from the previous report, because the ECE review focused exclusively on center-based interventions. The Early Childhood Education Interventions for Children with Disabilities topic area includes both center-based and home-based interventions in the review. For the current report, we report only the comparison between the parent-implemented intervention group and the no-treatment comparison group. The comparison between the staff-implemented intervention group and the no-treatment control group did not meet evidence standards because of high differential attrition and lack of baseline equivalence and is excluded from this report.
2. Crain-Thoreson and Dale (1999) report the mean age of children in all three groups (staff-implemented dialogic reading, parent-implemented dialogic reading, and no-treatment control) who completed the study. The comparison between the staff-implemented group and the no-treatment comparison group did not meet evidence standards because of high differential attrition and lack of baseline equivalence and is excluded from this report.

Appendix A1.2   Study characteristics: Dale, Crain-Thoreson, Notari-Syverson, & Cole, 1996 (randomized controlled trial)

Characteristic	Description
Study citation	Dale, P. S., Crain-Thoreson, C., Notari-Syverson, A., & Cole, K. (1996). Parent-child book reading as an intervention technique for young children with language delays. *Topics in Early Childhood Special Education, 16*(2), 213–235.
Participants	Thirty-three mother-child dyads were recruited over a two-year period from an early childhood education center. The children were ages three to six and had mild to moderate language delays, functioning at the two- to four-year-old level; 27% of the sample was female. Average baseline test scores on the Peabody Picture Vocabulary Test–Revised were more than 2 standard deviations below the normed mean. English was the primary language for all dyads. The dyads were assigned randomly either to dialogic reading or to the comparison condition, the *Conversational Language Training Program*.
Setting	Study participants were recruited from programs at the Experimental Education Unit at the University of Washington. Parent training sessions were conducted in small groups in therapy/lab rooms.
Intervention	Parents attended two training sessions with their children, where they viewed a videotaped presentation of effective ways of facilitating language development through reading and then had a brief group discussion. Modules helped facilitate appropriate parental feedback to children during book reading. The intervention included handouts that summarized each of the modules and included examples. Parents were asked to implement the intervention at home over a six- to eight-week period. Books and handouts were given to parents to take home with them. Researchers were unable to assess the consistency of parental implementation of this program.
Comparison	The comparison program, the *Conversational Language Training Program*, was designed to be comparable both in presentation and in general nature to the intervention but did not include books. Both the intervention and the comparison program emphasized an interactive, responsive style of communication with children. Parents in the comparison group attended two training sessions in which they viewed videotapes, received handouts, were given one of two toys, and were asked to implement the comparison program at home over a six- to eight-week period.
Primary outcomes and measurement	The primary outcome domain was children's communication and language competencies. The study used three nonstandardized measures of communication and language competencies: mean length utterance, number of different words used (lexical diversity), and total number of utterances. The study used these measures for two types of activities: book reading and play. For a more detailed description of these outcome measures, see Appendix A2.
Staff/teacher/parent training	Parents were trained in dialogic reading in two sessions. Training included a videotaped presentation, group discussion, and handouts summarizing program components.

Appendix A2   Outcome measures for the communication and language competencies domain

Outcome measure[1]	Description
Peabody Picture Vocabulary Test–Revised (PPVT-R)	A standardized measure of children's receptive vocabulary that requires them to identify pictures that correspond to spoken words (as cited in Crain-Thoreson & Dale, 1999).
Expressive One-Word Picture Vocabulary Test–Revised (EOWPVT-R)	A standardized measure of children's expressive vocabulary that requires them to name pictures of common objects, actions, and concepts (as cited in Crain-Thoreson & Dale, 1999).
Mean length of utterances (MLU)	The number of child utterances during videotaped activity measured using the Computerized Language Analysis Programs (CLAN) (as cited by Crain-Thoreson & Dale, 1999; Dale et al., 1996).
Number of child utterances	The number of child utterances during videotaped activity measured using CLAN (as cited by Crain-Thoreson & Dale, 1999; Dale et al., 1996).
Lexical diversity	The number of different words spoken by the child during videotaped activity measured using CLAN (as cited by Crain-Thoreson & Dale, 1999; Dale et al., 1996).

1. Process-oriented outcomes measuring the children's engagement in the tasks—called "partic" in Crain-Thoreson and Dale (1999) and "verbal engagement" or "total engagement" in Dale et al. (1996)—are excluded from this report.

Appendix A3   Summary of study findings included in the rating for the communication and language competencies domain[1]

Outcome measure	Study sample	Sample size (children)	Mean outcome (standard deviation)[2]		Mean difference[4] (Dialogic reading – comparison)	Effect size[5]	Statistical significance[6] (at $\alpha = 0.05$)	Improvement index[7]
			Dialogic reading group[3]	Comparison group				
Crain-Thoreson & Dale, 1999 (randomized controlled trial)[8]—Parent-led implementation								
PPVT-R	3–5 year olds	19	61.10 (16.50)	62.00 (16.20)	−0.90	−0.05	ns	−2
EOWPVT-R	3–5 year olds	19	74.80 (12.10)	71.00 (10.60)	3.80	0.32	ns	+12
Mean length utterance	3–5 year olds	19	2.75 (0.72)	2.70 (0.97)	0.05	0.06	ns	+2
Total utterances	3–5 year olds	19	38.70 (10.30)	35.30 (21.30)	3.40	0.20	ns	+8
Lexical diversity	3–5 year olds	19	49.00 (13.00)	48.80 (38.70)	0.20	0.01	ns	0
Average for communication and language competencies (Crain-Thoreson & Dale, 1999)[9]						**0.11**	**ns**	**+4**
Dale et al., 1996 (randomized controlled trial)[8]								
Total utterances—book reading	3–6 year olds	33	63.80 (13.90)	40.30 (13.60)	23.50	1.67	Statistically significant	+45
Mean length utterances—book reading	3–6 year olds	33	2.82 (0.76)	2.75 (0.90)	0.07	0.08	ns	+3
Lexical diversity—book reading	3–6 year olds	33	14.60 (12.30)	14.60 (8.30)	0.00	0.00	ns	0
Total utterances—play	3–6 year olds	33	94.50 (36.20)	92.30 (36.40)	2.20	0.06	ns	+2

(continued)

| | | | Authors' findings from the study | | WWC calculations | | | |
| | | | Mean outcome (standard deviation)[2] | | | | | |
Outcome measure	Study sample	Sample size (children)	Dialogic reading group[3]	Comparison group	Mean difference[4] (Dialogic reading – comparison)	Effect size[5]	Statistical significance[6] (at $\alpha = 0.05$)	Improvement index[7]
Mean length utterances—play	3–6 year olds	33	3.08 (1.09)	2.98 (0.81)	0.10	0.10	ns	+4
Lexical diversity—play	3–6 year olds	33	75.00 (20.60)	54.90 (22.00)	20.10	0.92	Statistically significant	+32
Average for communication and language competencies (Dale et al., 1996)[9]						0.47	ns	+18
Domain average for communication and language competencies across all studies[9]						0.29	ns	+11

ns = not statistically significant

PPVT-R = Peabody Picture Vocabulary Test–Revised

EOWPVT-R = Expressive One-Word Picture Vocabulary Test–Revised

1. This appendix reports findings considered for the effectiveness rating and the average improvement indices for the communication and language competencies domain.
2. The standard deviation across all students in each group shows how dispersed the participants' outcomes are: a smaller standard deviation on a given measure would indicate that participants had more similar outcomes.
3. The dialogic reading group mean is the sum of the unadjusted comparison group mean and the adjusted mean difference, which accounts for pretest. Standard deviations are unadjusted.
4. Positive differences and effect sizes favor the intervention group; negative differences and effect sizes favor the comparison group. The mean difference is adjusted for pretest differences between the treatment and comparison groups.
5. For an explanation of the effect size calculation, see WWC Procedures and Standards Handbook, Appendix B.
6. Statistical significance is the probability that the difference between groups is a result of chance rather than a real difference between the groups.
7. The improvement index represents the difference between the percentile rank of the average student in the intervention condition and that of the average student in the comparison condition. The improvement index can take on values between –50 and +50, with positive numbers denoting favorable results for the intervention group.
8. The level of statistical significance was reported by the study authors or, when necessary, calculated by the WWC to correct for clustering within classrooms or schools and for multiple comparisons. For an explanation about the clustering correction, see the WWC Tutorial on Mismatch. For the formulas the WWC used to calculate the statistical significance, see WWC Procedures and Standards Handbook, Appendix C for clustering and WWC Procedures and Standards Handbook, Appendix D for multiple comparisons. For the two dialogic reading studies summarized here, no corrections for clustering were needed; however, corrections for multiple comparisons were needed, so the significance levels may differ from those reported in the original studies.
9. The WWC-computed average effect sizes for each study and for the domain across studies are simple averages rounded to two decimal places. The average improvement indices are calculated from the average effect sizes.

Appendix A4   Dialogic reading rating for the communication and language competencies domain

The WWC rates an intervention's effects in a given outcome domain as positive, potentially positive, mixed, no discernible effects, potentially negative, or negative.[1]

For the outcome domain of communication and language competencies for children with disabilities, the WWC rated dialogic reading as having potentially positive effects. The remaining ratings (mixed effects, no discernible effects, potentially negative effects, negative effects) were not considered, as dialogic reading was assigned the highest applicable rating.

Rating received

Potentially positive effects: Evidence of a positive effect with no overriding contrary evidence.

- Criterion 1: At least one study showing a statistically significant or substantively important *positive* effect.

  Met. One study found statistically significant positive effects.

AND

- Criterion 2: No studies showing a statistically significant or substantively important *negative* effect and fewer or the same number of studies showing *indeterminate* effects than showing statistically significant or substantively important *positive* effects.

  Met. No studies showed statistically significant or substantively important negative effects.

Other ratings considered

Positive effects: Strong evidence of a positive effect with no overriding contrary evidence.

- Criterion 1: Two or more studies showing statistically significant *positive* effects, at least one of which met WWC evidence standards for a *strong* design.

  Not met. Only one study of dialogic reading showed a statistically significant positive effect.

AND

- Criterion 2: No studies showing statistically significant or substantively important *negative* effects.

  Met. No studies showed statistically significant or substantively important negative effects.

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1. For rating purposes, the WWC considers the statistical significance of individual outcomes and the domain-level effect. The WWC also considers the size of the domain-level effect for ratings of potentially positive or potentially negative effects. For a complete description, see the WWC Procedures and Standards Handbook, Appendix E.

Appendix A5   Extent of evidence by domain

Outcome domain	Number of studies	Sample size Schools/centers[1]	Students	Extent of evidence[2]
Cognitive development	0	na	na	na
Communication/language competencies	2	6	52	Small
Literacy	0	na	na	na
Math competencies	0	na	na	na
Social-emotional development/behavior	0	na	na	na
Functional abilities	0	na	na	na
Physical well-being	0	na	na	na

na = not applicable/not studied

1. The number of centers represented in the communication/language competencies domain is an estimate. Crain-Thoreson and Dale (1999) do not report the number of classrooms assigned to each condition (three districts, five schools, and five classes were represented in the study). The design of the study makes it likely that all five classrooms were represented in each study condition.
2. A rating of "medium to large" requires at least two studies and two schools across studies in one domain and a total sample size across studies of at least 350 students or 14 classrooms. Otherwise, the rating is "small." For more details on the extent of evidence categorization, see the WWC Procedures and Standards Handbook, Appendix G.