

Children's Story Retelling as a Literacy and Language Enhancement Strategy

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The effects of children's story retelling on early literacy and language development was examined in a meta-analysis of 11 studies including 687 toddlers and preschoolers. Results indicated that children's story retelling influenced both story-related comprehension and expressive vocabulary as well as nonstory-related receptive language and early literacy development. Findings also showed that the use of the characteristics that experts consider the important features of retelling practices was associated with positive child outcomes. Implications for practice are described.

Engaging young children in retelling stories read to them by parents or teachers is a strategy that is often used to promote story-related comprehension and expressive vocabulary (e.g., Gambrell & Dromsky, 2000; Geva & Olson, 1983; Soundy, 1993). When used with toddlers and preschoolers, a child or group of children is asked to retell, rehearse, or recall different parts of a story read to them by adults or older children (Koskinen, Gambrell, Kapinus, & Heathington, 1988). According to Isbell (2002), "Retelling stories encourages children to use their imagination, expand their ideas, and create visual images as they transfer the plot [of the story] to new settings, including different characters or new voices" (p. 28).

A retelling episode typically includes a teacher or parent scaffolding child engagement in storybook reading. This often includes asking open-ended questions, asking a child to make predictions, and engaging a child in verbal elaborations. Story retelling is characterized by actively involving a child in the reading episode, retelling the story to the child, promoting additional child elaborations and expansions, and asking the child to retell the story (in his or her own words) (Cliatt & Shaw, 1988).

The purpose of the meta-analysis reported in this *CELL-review* was to investigate the effectiveness of children's story retelling on the children's story-related comprehension and expressive vocabulary. The goal was to identify the characteristics of and conditions under which children's story retelling has the largest sizes of effect on the study outcomes, and especially comprehension and expressive vocabulary consistent with the hypothesis that children's story retelling should influence these particular outcomes (Gambrell & Dromsky, 2000; Isbell, 2002; Koskinen et al., 1988).

Search Strategy

Studies were located using *retelling, story retell*, pretend reading, retold story, child retell, child story retell AND infant, infancy, toddler, preschool, kindergarten, neonat** as search terms. Both controlled-vocabulary and natural-language searches were conducted (Isbell, 2002; Koskinen et al., 1988; Lucas & Cutspec, 2007).

Psychological Abstracts (PsycINFO), Education Resource Information Center (ERIC), Medline, Academic Search Premier, Education Research Complete, and CINAHL were searched. These were supplemented by Google Scholar, Scirus, Ingenta, JStor, and Socindex searches, as well as a search of an EndNote Library maintained by our Institute. Hand searches of the reference sections of all retrieved journal articles, book chapters, books, dissertations, and unpublished papers were also examined to locate additional studies. Studies were included if child retelling was used as part of a storybook reading intervention and either pretest-post test changes or between group comparisons were made between interventions and nonintervention group participants and the largest majority of participants in a study were 72 months of age or younger.

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Search Results

Eleven studies were located that included 13 samples of toddlers and preschoolers. The studies included 687 children. Appendix A shows the background characteristics of the participants. The children's average mean age was 57 months (SD = 11, Range = 35-93). The children were equally divided between males (51%) and females (49%). Four of the samples consisted of typically developing children, eight samples consisted of children considered at risk for poor outcomes, and one sample consisted of children with intellectual disabilities.

Selected characteristics of the storybook reading sessions are shown in Appendix B. All but one intervention

employed picture books or storybooks. The largest majority of child retellings were done on an individual basis (N=6) or both an individual and group basis (N=3). The children were engaged in retelling stories between one (N=2) and four or more times (N=7). The storybook-reading sessions lasted between 15 and 45 minutes and the interventions lasted from 1 to 36 weeks.

The storybook-reading episodes by the adults and the child story retellings were examined in each study to identify the characteristics of the interventions. Table 1 shows the characteristics that were coded for both the adults and children. Appendix C shows which studies included the different adult characteristics and Appendix D shows which studies included the child's retelling characteristics. A char-

Table 1
Definitions of the Characteristics of the Retelling Intervention

Characteristic	Definition
<i>Adult Reading</i>	
Story introduction	Reader introduces the story by showing the cover of the book and prompts class to predict what the story may be about before beginning to read it.
Repeated readings	The oral reading of the same book multiple times from a caregiver to the child.
Story review	Reader presents an oral review of the characters and events in the story.
Relatedness	Reader relates a picture or event in story to child's personal experience.
Prompts child responses	Reader asks child to make comments and ask questions during the reading or reader pauses during reading episode in order to prompt the child to fill in the missing information.
Open-ended questions	Reader asks the child open-ended questions about the book during the reading episode or the reader asks questions that the child already knows answers to in order to get the child to respond or make comments.
Asks for predictions	Before reading the story, the reader asks child to make a prediction of what the story is about based upon what the child sees on the cover of the book.
Manipulatives	Reader uses props or toys relevant to the book that help engage the child in the reading episode.
Visual aid	Reader tells story utilizing a visual aid such as the book illustrations or separate picture sequencing cards.
<i>Child's Retelling</i>	
Adult prompting	Reader encourages child to go further with their retelling using phrases such as "What happened next?" or "And then what?" Reader assists child with their retelling by helping the child focus on structural elements, encouraging the child to explain characters, events, and plots.
Elaborations	Reader uses a conversational approach to help the child reconstruct the story and relate parts of the story to the child's own experiences. Reader uses specific questions to guide the child's attention to story structure.
Book access	Child is allowed to hold and use the book for cues during the retelling.
Dramatization	Child is asked to role play or act out parts of the story while the story is being read.
Visual Aid	Reader provides child with picture sequencing cards or pictures in the book that illustrate the events in the story to assist in child's retelling.
Manipulatives	Child is given props or toys relevant to the book that can be used by the child to help retell the story.

acteristic was coded as used by the investigators if it was described in the research report as a key feature of the retelling practice. Both the adult and child features of the interventions included the characteristics that reading experts consider the children's story retelling practices (e.g., Gambrell & Dromsky, 2000; Koskinen et al., 1988; Soundy, 1993) although individual investigators tended to emphasize the use of different reading characteristics.

The outcomes used to evaluate the effects of child story retelling included comprehension (e.g., Leung, 2008; Simon, 2003), expressive vocabulary (e.g., Newcomer & Hammill, 1988), receptive language (e.g., Dunn & Dunn, 1981; Geva & Olson, 1983; Morrow, Sisco, & Smith, 1992), and different aspects of early literacy development (phonological awareness, print awareness, etc.). The comprehension measures included, but were not limited to, both the children's story-related comprehension (e.g., Morrow et al., 1992; Simon, 2003) and a child's ability to infer meaning from orally presented text (e.g., Karweit, 1989). The receptive language measures mostly included standardized tests of correct identification of named pictures (e.g., Evans, 2006). The expressive vocabulary measures included both a child's ability to retell parts of or key aspects of a story (e.g., Morrow, 1985; Stalnaker & Craghead, 1982) and standardized expressive language tests (e.g., Karweit, 1989). One focus of the meta-analysis was the extent to which the findings were consistent with the expectation that children's retelling would affect their comprehension and expressive vocabulary (e.g., Geva & Olson, 1983; John, Lui, & Tannock, 2003; Morrow et al., 1992).

Nine studies employed between group quasi-experimental designs, four studies used one group pretest-post test designs, and two studies used between group experimental designs. Cohen's *d* effect sizes for the pretest-post test gains or the effect sizes for the post-test differences between the intervention and nonintervention group participants were used to estimate the effects of story retelling on the study outcomes. The average weighted effect sizes were used to estimate the effects of the retelling interventions. The 95% confidence intervals (CI) for the average effect sizes were used for substantive interpretation of the findings. A 95% CI not including zero indicates that the average effect size differs significantly from zero at the $p < .05$ level (Rosenthal, 1994). An effect size between 0.20 and 0.49 is considered small, an effect size between 0.50 and 0.79 is considered medium, and an effect size equal to or greater than 0.80 is considered large (Lipsey & Wilson, 2001).

Synthesis Findings

Preliminary analyses were performed to determine if the quasi-experimental design studies produced average effect sizes that were larger than those for the experimental design studies. The experimental studies has an average $d =$

0.88 (95 CI= 0.71 to 1.05) and the quasi-experimental design studies had an average $d = 0.42$ (95% CI = 0.35 to 0.49). Inasmuch as the latter type of design did not yield inflated effect sizes, we performed all primary analyses with all studies combined.

Figure 1 shows the effect sizes for the types of outcomes constituting the focus of investigation. The story retelling interventions had positive effects on the children's literacy-related and language outcomes. The largest effect sizes were for the two outcomes (comprehension, expressive vocabulary) with which children's story retelling has been hypothesized to be associated.

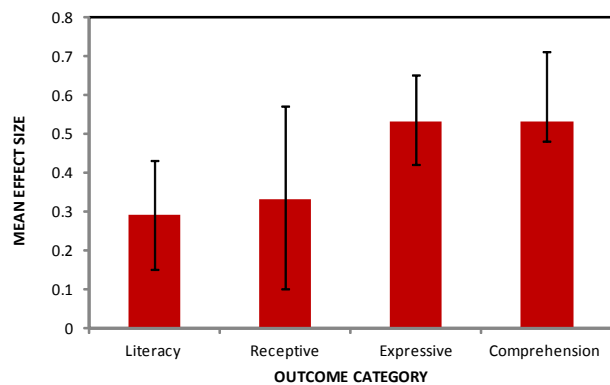


Figure 1. Average effect sizes and 95% confidence intervals for the relationship between children's story retelling and child literacy and language outcomes.

Different investigators tended to emphasize the importance of different adult and child retelling characteristics as the factors influencing text comprehension and expressive vocabulary. The relative importance of the characteristics listed in Table 1 was examined by computing the effect sizes for whether they were explicitly used in each study to identify which characteristics were in fact associated with the largest sizes of effect. The results are shown in Table 2. All of the characteristics were significantly related to the child outcomes as evidenced by confidence intervals not including zero. The characteristics were, however, differentially related to the children's literacy and language outcomes. Relating the story to a child's interests or personal experiences proved the most effective practice. A cluster of instructional practices during both the adult reading a story and a child retelling the story were associated with positive child outcomes. These included an adult reading and rereading a story, prompting child responses and verbal elaborations, asking questions and requesting predictions, and encouraging and supporting child retelling. The use of manipulatives and visual aids was somewhat more effective when used by the children compared to the adults. Taken together, the results provide support for the contentions made by reading experts in terms of the key features of retelling interventions.

The extent to which a combination of characteristics

Table 2
Average Effect Sizes and 95% Confidence Intervals (CI) for the Adult Reading and Child Retelling Characteristics

Characteristics	Number of Effect Sizes	Average Effect Size	95% CI
<i>Adult Reading</i>			
Related Story to Child's Interests/Experiences	11	.91	.73-1.09
Reread Story to Child	6	.87	.31-1.43
Introduced Story to the Child	38	.57	.49-.65
Reviewed Story with the Child	12	.56	.45-.68
Prompted Child Response	15	.49	.37-.61
Asked Open-Ended Questions	13	.46	.32-.59
Requested Child Predictions	16	.50	.39-.50
Used Visual Aids	39	.43	.36-.50
<i>Child Retelling</i>			
Adult Prompted Child Elaborations	7	.62	.30-.95
Used Manipulatives During Retelling	16	.59	.36-.81
Adult-Prompted Child Retelling	22	.50	.37-.63
Used Visual Aids	27	.52	.42-.63
Child Provided Access to Books	10	.40	.16-.64
Encouraged Child Role Playing of Story	20	.39	.30-.48

was associated with larger sizes of effect was determined by summing the number of adult and child characteristics used in a study and examining the effect sizes for different numbers of characteristics. The results are shown in Figure 2. Using only 1 or 2 characteristics was not at all effective, whereas using 3 or more characteristics was associated with larger effect sizes. The practices were optimally effective when 3 to 6 characteristics were used as part of the interventions. The inverted-U function shown in the figure suggests that the use of too few characteristics is not at all effective and the use of too many characteristics may be too much for a child to process. The particular combination of practices (5 or 6) that was associated with the largest effect sizes included relating the story to a child's interests or experiences, taking the time to introduce/explain the story, asking a child either open-ended questions or to make predictions following story introductions, prompting child retelling or verbal elaborations, and using visual aids or manipulatives.

Whether the relationships between the retelling interventions and child the outcomes were moderated by study or child variables is shown in Table 3. Enough information was included in the primary studies to code three study variables (year of publication, type of publication, intervener) and two child variables (age, condition). The relationships between the intervention and outcome variables were all statistically significant regardless of the moderators as evidence by confidence intervals not including zero. There were, however, some noticeable differences for several between moderator group comparisons. The interventions were more effective when implemented with the youngest children and

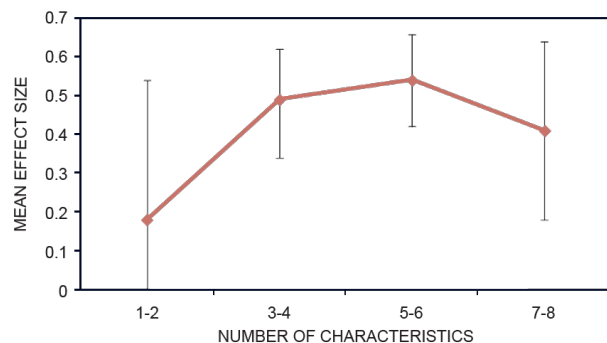


Figure 2. Average effect sizes and 95% confidence intervals for the use of different combinations of adult and child retelling characteristics.

when conducted by the investigators, and studies conducted prior to 1990 had larger effect sizes than those conducted between 1990 and 2008.

Discussion

Results reported in this *CELLreview* showed that children's story retelling was an effective literacy and language enhancement strategy, and that a combination of different intervention practice characteristics was associated with the largest sizes of effect with the study outcomes. The particular characteristics that were associated with positive results included relating the story to a child's interests or personal experiences, taking the time to introduce/explain the story, asking a child either open-ended questions or for predictions after introducing the story, prompting child retelling or

Table 3
Moderators of the Relationship Between Children's Story Retelling and the Study Outcomes

Moderators	Number of Effect Sizes	Average Effect Sizes	95% CI
<i>Year of Publication</i>			
1982-1989	35	.57	.49-.65
1990-2008	23	.33	.21-.45
<i>Type of Publication</i>			
Journal Article	50	.50	.43-.57
Non-Journal Article	8	.44	.22-.67
<i>Intervener</i>			
Study Investigator	25	.76	.62-.91
Practitioners	33	.42	.35-.50
<i>Child Age (months)</i>			
41-57	28	.60	.49-.71
60-73	30	.43	.35-.52
<i>Child Condition</i>			
Typically Developing	13	.46	.32-.59
At Risk/Disabled	45	.50	.43-.58

NOTE. CI = Confidence Intervals.

verbal elaborations, and using visual aids or manipulatives. These characteristics are very similar to those Cliatt and Shaw (1988) as well as others (e.g., Gambrell & Dromsky, 2000; Isbell, 2002; Soundy, 1993) generally consider the key features of child story retelling.

The particular characteristics that were found to be most associated with positive child outcomes include elements that are considered the key features of scaffolding (Berk & Winsler, 1995), responsive teaching (Raab & Dunst, 2009), or other naturalistic teaching procedures (Dunst, Raab, & Trivette, in press). These include, but are not limited to, engaging children in interest-based learning opportunities, teacher responsiveness to child behavior, and the use of a variety of response elaboration strategies (e.g., asking questions, prompting responses). The key characteristics of children's story retelling practices therefore can be considered a special case of a naturalistic instructional practice (Pickert & Chase, 1978; Valdez-Menchaca & Whitehurst, 1988) for promoting early literacy and language development.

Proponents of children's story retelling assert that the practice is particularly useful for promoting text comprehension and verbal vocabulary (e.g., Hansen, 2004; Isbell, 2002; Koskinen et al., 1988; Morrow et al., 1992). Findings reported in this *CELLreview* confirm this expectation. The two outcomes measures which had the largest effect sizes were expressive vocabulary and comprehension.

Implications for Practice

Isbell (2002) proposed a telling and retelling intervention strategy that includes nearly all the key features of retelling identified in this synthesis as effective practices. Her sto-

rytelling procedure includes reading a story to a child, actively engaging the child in the reading episode, rereading the story to a child, promoting deeper child participation in the reading episode, asking the child to retell the story, and prompting child comprehension and verbal elaborations. As previously mentioned, different retelling enthusiasts tend to highlight the importance of different strategies and practices, including, but not limited to, story props (Carger, 1993; Soundy, 1993), asking questions (Myers, 2005), modeling retelling (Brown & Cambourne, 1987; Gambrell & Dromsky, 2000), responsiveness to child initiations and responses (Isbell, 2002; Kupetz & Green, 1997), and actively engaging a child in story retelling (Geva & Olson, 1983; Pappas & Pettegrew, 1991). Incorporating 3 or 4 of these characteristics into any one retelling episode is likely to have positive effects on young children's early literacy and language development.

Nearly all the *CELL* storytelling and reading practice guides (www.earlyliteracylearning.org) either include many of the retelling characteristics found effective in promoting early literacy and language skills or can be easily incorporated into the practices. These include interest-based storytelling activities, repeated story and book reading, asking questions and prompting child engagement, encouraging verbal descriptions and elaborations, and promoting child retelling as he or she develops expressive language skills. All of the practice guides, whether for infants, toddlers or preschoolers, include the use of naturalistic teaching procedures that make reading and retelling not only fun, enjoyable, and interesting, but also effective intervention practices for promoting comprehension and expressive vocabulary as well as receptive language and early literacy development.

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Appendix A
Background Characteristics of the Child Participants

Study	Sample Size	Child Mean Age (Months)	Child Age Range (Months)	Child Gender		Child		Child Condition
				Male	Female	Ethnicity	Percent	
Carger (1993)	3	66	NR	1	2	Latino	100	At-risk
Center & Freeman (1997)	156	72	NR	87	69	NR	NR	At-risk
Evans (2006)	16	56 ^a	51-62	8	8	African American	88	At-risk
						Caucasian	6	
						Latino	6	
Karweit (1989) (Sample 1)	86	48	NR	NR	NR	NR	NR	At-risk
Karweit (1989) (Sample 2)	120	60	NR	NR	NR	NR	NR	At-risk
Leung (2008) (Sample 1)	14	41	35-49	NR	NR	Caucasian	66	Typically developing
						African American	25	
						Asian American	6	
						Latino	3	
Leung (2008) (Sample 2)	18	54	50-61	NR	NR	Caucasian	66	Typically developing
						African American	25	
						Asian American	6	
						Latino	3	
Morrow (1985) (Study 1)	59	68	NR	34	25	NR	NR	Typically developing
Morrow (1985) (Study 2)	82	62	NR	39	43	NR	NR	Typically developing
Morrow (1988)	54	48	NR	NR	NR	Caucasian	60	At-risk
						Other	40	
Morrow et al. (1992)	24	73	58-93	7	17	NR	NR	Intellectually disabled
Simon (2003)	43	42	36-48	21	22	NR	NR	At-risk
Stalnaker & Creaghead (1982)	12	57 ^a	48-66	4	8	African American	92	At-risk
						Caucasian	8	

^a Median.
 NR = Not Reported.

Appendix B
Characteristics of the Child Retelling Reading Episodes

Study	Type of Book	Child Retelling Details			Group or Individual Child Retelling	Class Size	Duration of Each Session (Minutes)	Duration of Study (Weeks)
		Number of Stories Retold	Number of Retellings	Total Number of Retellings by Child				
Carger (1993)	Storybook ^a	1	4	4	Both	8	NR	1
Center & Freeman (1997)	Storybook	NR	NR	NR	NR	15 ^d	20	24
Evans (2006)	Storybook	12	5	72	Both	17	45	12
Karweit (1989)	Storybook	70 ^d	2	70	Both	20 ^d	25	36 ^d
Leung (2008)	Informational text ^c	4	3	12	Individual	4	NR	4
Morrow (1985) Study 1	Picture Book ^b	1	1	1	Individual	15	10	NR
Morrow (1985) Study 2	Picture Book	8	1	8	Individual	15 ^d	NR	10
Morrow (1988)	Storybook	9	1	9	Individual	18 ^d	15	10
Morrow et al. (1992)	Picture Book	12	1	12	Individual	1	NR	8
Simon (2003)	Storybook	NR	1	NR	Group	15+ ^d	20	10
Stalnaker & Creaghead (1982)	Storybook	1	1	1	Individual	12	15	NR

^a Primarily text with pictures.

^b Science book.

^c Picture book with limited text.

^d Estimated.

NR = Not reported.

Appendix C

Selected Characteristics of the Initial Adult Story Reading to the Children

Study	Introduction			Elaborations			Props	
	Story Introduction	Repeated Reading	Story Review Relatedness	Prompts Child Responses	Open-ended Questions	Asks for Predictions	Included Manipulatives	Visual Aid
Carger (1993)		X					X	X
Center & Freeman (1997)				X				X
Evans (2006)	X		X					X
Karweit (1989)	X		X			X		X
Leung (2008)		X	X	X	X			X
Morrow (1985) Study 1	X				X			X
Morrow (1985) Study 2	X				X			X
Morrow (1988)	X		X	X				
Morrow et al. (1992)								
Simon (2003)	X					X	X	X
Stalnaker & Creaghead (1982)							X	

Appendix D

Selected Characteristics of Child's Story Retelling

Study	Scaffolding		Supports			
	Adult Prompting	Elaborations	Book Access	Dramatization	Visual Aid	Includes Manipulatives
Carger (1993)	X		X		X	X
Center & Freeman (1997)				X		
Evans (2006)						X
Karweit (1989)				X	X	
Leung (2008)	X	X			X	
Morrow (1985) Study 1	X					
Morrow (1985) Study 2	X					
Morrow (1988)						
Morrow et al. (1992)	X	X			X	X
Simon (2003)			X	X	X	
Stalnaker & Creaghead (1982)						X

Appendix E

Cohen's d Effect Sizes of the Effects of Child Retelling on the Child Outcomes

Study	Type of Design	Type of Measure	Comparison	Outcome Category	Child Outcome Measure	Cohen's <i>d</i> Effect Size
Carger (1993)	One group pretest-post test	Basic word count during child's audio recorded pretend reading	Pretest-post difference	Expressive Language	Total number of words during child's retelling	1.31
					Number of multi syllable words in retelling	2.22
					Number of meaning units in retelling	1.24
					Number of target vocabulary words in retelling	1.53
Center & Freeman (1997)	Between group quasi-experimental	Passage Reading Test (Deno et al. 1982)	Post-test difference	Literacy Related	Median number of words read correctly in one minute (Reading Connected Texts)	0.39
		Invented Spelling Test (Mann et al. 1987)	Post-test difference	Literacy Related	Invented spelling	0.14
		Expressive Word Attack Skills Test, Pseudo-word section only	Post-test difference	Literacy Related	Number of correct phonological decodings deciphered by child when test administer points to vowels and vowel blends (Reading Pseudo-words)	0.12
		Burt Word Reading Test (Gilmore et al. 1981)	Post-test difference	Literacy Related	Word recognition	0.04
Evans (2006)	One group pretest-post test	Peabody Picture Vocabulary Test (Dunn & Dunn 1981)	Pretest-post difference	Receptive Language	Frequency child pointed to correct picture of target word being spoken	0.44
		Developmental Indicators for the Assessment of Learning-3 (Mardel-Czudnowski & Goldenberg 1998)	Pretest-post difference	Expressive/Receptive Language	Child's gains in receptive and expressive language skills	1.76
Karweit (1989) (Sample 1)	Between group quasi-experimental	Test of Language Development (Newcomer & Hammill 1988) (Picture Vocabulary)	Post-test difference	Receptive Language	Frequency child points to correct picture out of six that best represents a series of two-word stimulus (semantics, listening)	0.52
		Test of Language Development (Newcomer & Hammill 1988) (Sentence imitation)	Post-test difference	Expressive Language	Child's ability to repeat a sentence spoken by the reader	0.50
		Test of Language Development (Newcomer & Hammill 1988) (Grammatical completion)	Post-test difference	Expressive Language	Frequency child can supply the correct morpheme missing from an unfinished sentence	0.28
		Merrill Language Screening Test (Mumm et al. 1980)	Post-test difference	Comprehension	Child's ability to infer meaning from pseudo words	0.57
Karweit (1989) (Sample 2)	Between group quasi-experimental	Test of Language Development (Newcomer & Hammill 1988) (Picture Vocabulary)	Post-test difference	Receptive Language	Frequency child points to correct picture out of six that best represents a series of two-word stimulus (semantics, listening)	0.24
		Test of Language Development (Newcomer & Hammill 1988) (Sentence imitation)	Post-test difference	Expressive Language	Child's ability to repeat a sentence just spoken by the reader	0.49
		Test of Language Development (Newcomer & Hammill 1988) (Grammatical completion)	Post-test difference	Expressive Language	Frequency child can supply the correct morpheme missing from an unfinished sentence	0.61
		Merrill Language Screening Test Comprehension (Mumm et al. 1980)	Post-test difference	Comprehension	Child's ability to infer meaning from pseudo words	0.52
		Woodcock Language Proficiency Battery Letter-Word Test (Woodcock & Johnson 1977)	Post-test difference	Expressive Language	Child's general English language proficiency assessed by reading and writing tasks	0.62
		Woodcock Word Attack (Woodcock & Johnson 1977)	Post-test difference	Literacy Related	Child's ability to correctly pronounce phonemes in pseudo words	1.04

Appendix E, continued

Study	Type of Design	Type of Measure	Comparison	Outcome Category	Child Outcome Measure	Cohen's <i>d</i> Effect Size
Leung (2008) (Sample 1)	One group pretest-post test	Comparison of recall test scores between retelling condition and no retelling condition	Post-test difference	Comprehension	Rating of target vocabulary comprehension	0.54
Leung (2008) (Sample 2)	One group pretest-post test	Comparison of recall test scores between retelling condition and no retelling condition	Post-test difference	Comprehension	Rating of target vocabulary comprehension	0.43
Morrow (1985) Study 1	Between group quasi-experimental	Comprehension Test and Structural Test	Post-test difference	Comprehension	Composite score from both comprehension and story structure tests	0.55
Morrow (1985) Study 2	Between group quasi-experimental	Comprehension Test and Structural Test	Post-test difference	Comprehension	Score on a traditional comprehension test	0.81
					Score on a story structure test	0.77
	Between group quasi-experimental	Transcribed children's story retellings analyzed for inclusion of structural elements and overall language complexity	Post-test difference	Comprehension	Number of setting items included in retelling	0.44
					Number of theme items included in retelling	0.00
					Number of plot episodes included in retelling	0.82
					Number of story resolution items included in retelling	0.32
					Number of correct story sequences during retelling	0.60
					Expressive Language	Average number of words per spoken unit
	Expressive Language	Syntactic complexity count	-1.81			
	Morrow (1988)	Experimental	Transcribed child utterances during readings	Post-test difference	Expressive Language	Frequency of child comments during readings
Frequency of child questions during readings						1.94
Frequency of child's speech focusing on meaning						1.20
Frequency of child's speech focusing on detail						0.91
Frequency of child's speech focusing on interpretation						1.27
Frequency of child's speech focusing on prediction						0.21
Frequency of child's speech that draws from experience						1.28
Frequency of child's speech focusing on labeling						1.42
Frequency of child's speech focusing on narration						0.16
Morrow et al. (1992)						Experimental
	Number of theme items included in retelling	0.55				
	Number of plot episodes included in retelling	0.67				
	Number of story resolution items included in story retelling	0.71				
	Number of correct story sequences during retelling	0.86				

Appendix E, continued

Study	Type of Design	Type of Measure	Comparison	Outcome Category	Child Outcome Measure	Cohen's <i>d</i> Effect Size
Simon (2003)	Between group quasi-experimental	Peabody Picture Vocabulary Test (Dunn & Dunn 1981)	Post-test difference	Receptive Language	Frequency child pointed to correct picture of target word being spoken	0.14
		Picture Description Fluency (Investigator developed)	Post-test difference	Comprehension	Total number of words child used in one minute to describe pictures of vocabulary words	-0.05
		SAIL Picture Description Fluency (Investigator developed)	Post-test difference	Comprehension	Total number of words child used to describe pictures of vocabulary words	1.10
		Comprehension Test	Post-test difference	Comprehension	Total number of 6 "what, where, and why" comprehension questions answered correctly by child	0.02
		Story Retell Fluency	Post-test difference	Comprehension	Number of words produced by child in one minute of retelling a story just heard	0.69
		Concepts About Print (Clay 1993)	Post-test difference	Literacy Related	Score of print awareness ability	0.13
Stalnaker & Creaghead (1982)	Between conditions quasi-experimental	15 minute recorded language sample from child's retelling of a story versus child's talk about play	Between conditions difference	Expressive Language	Total number of utterances in language sample	0.35
					Mean length of utterances in language sample	0.38
					Proportion of total utterances which are sentence fragments in language sample	-0.57
					Number of transformations and adverbial expansions in language sample	0.35
					Number of different semantic categories in language sample	0.38

NOTE. Comprehension outcome category includes either or both vocabulary or language comprehension outcomes.