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Review Article

Interventions Designed to Improve Narrative Language in School-Age Children: A Systematic Review With Meta-Analyses

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Purpose: The purpose of this systematic review with meta-analyses was to examine interventions that aimed to improve narrative language outcomes for preschool and elementary school–age children in the United States. Our goal was to examine peer-reviewed publications to describe the characteristics of these interventions and synthesize their overall effectiveness on narrative comprehension and production via meta-analysis.
Method: We searched electronic databases, examined previously published reviews, and consulted experts in the field to identify published studies that employed robust experimental and quasi-experimental designs. We included randomized controlled trials, studies with nonrandomized comparison groups, and single-case design (SCD) studies. We completed a qualitative synthesis of study factors for all identified studies and calculated meta-analyses for the studies that had sufficient data. All included studies were analyzed for risk of bias.
Results: Our systematic search yielded 40 studies that included one or more narrative language outcomes as part of their assessment battery. Twenty-four of the included studies were group design studies, including randomized controlled trials and quasi-experimental designs, and the other 16 were SCD studies. Effect sizes were analyzed based on narrative production and comprehension outcomes. The meta-analyses of 26 studies indicated overall positive effects of the interventions, with effect sizes of $d = 0.51$ and 0.54 in the group design studies and $d = 1.24$ in the SCD studies.
Conclusions: A variety of effective interventions were found that improve narrative production and comprehension outcomes in children with diverse learner characteristics. Some common characteristics across these interventions include manualized curricula, opportunities to produce narrative language, verbal and visual supports, direct instruction of story grammar, and use of authentic children's literature.
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How important is a child's ability to tell a story? Oral narrative ability is related to later language and academic outcomes for children of all ages (e.g., Bishop & Edmundson, 1987; Fazio et al., 1996; Griffin et al., 2004; O'Neill et al., 2004; Wellman et al., 2011). Retelling and recounting narratives are included in the U.S. Common Core standards for elementary students, further reflecting the importance of narrative language for academic outcomes (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). Experts in speech-language pathology and education have developed and implemented a variety of interventions that aim to improve narrative language for students with and without disabilities (see Spencer & Petersen, 2020). In this review, we sought to examine the characteristics of these interventions and their effectiveness.

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Oral Narrative Language

Oral narrative language is typically characterized as a one-sided monologue in which the narrator orally relates a series of sequenced events that are causally related (Peterson, 1990). Narrative language is often described in terms of its macro- and microstructure. Macrostructure is the organizational structure of the narrative, which is commonly referred to as "story grammar." Stein and Glenn (1979) described the most basic narrative as being composed of three elements: an initiating event or problem, the protagonist's attempt or attempts to resolve that problem, and the consequences of those actions. More complete narratives include a setting, the protagonist's internal response to the problem, a plan, and a reaction to the consequence (Stein & Glenn, 1982). Although different cultures may employ diverse narrative structures, most of the narratives students encounter in U.S. schools are constructed with this organizational pattern (Tappe & Hara, 2013). Narrative microstructure is the productivity and complexity of narrative language at the sentence level (i.e., grammatical complexity and accuracy, lexical diversity). Microstructure elements include the use of conjunctions, adverbs, noun phrases, and different verb types, in addition to other descriptive features, such as total number of words (TNW) and number of different words (NDW) used (Petersen et al., 2010).

Oral narrative discourse can involve retelling a story or generating a new story, and narrative generations may be based on personal experiences or fictional events invented by the narrator (Westerveld & Gillon, 2010). Although narrative retell may generally be considered an easier task than narrative generation, the difficulty for each task will depend on the narrator's particular characteristics and the demands of the narrative task (see Spencer & Petersen, 2020). For example, a child may generate a more complex narrative on a preferred topic than they would on a less interesting topic, even if they are retelling a familiar story. A child may also experience varying degrees of narrative proficiency dependent on the extent to which verbal or visual cues (e.g., graphic organizer, pictures, or story grammar icons) are provided (Schneider & Dubé, 2005).

Skills Required to Produce Oral Narrative Language

Producing narratives is a complex, discourse-level skill. Narrators must integrate their linguistic and cognitive skills with their pragmatic knowledge to make a narrative meaningful to their audience (Boudreau, 2007). Narratives typically involve decontextualized language, as the events of the story are not within the immediate context of the narrator and audience. To facilitate listener comprehension, the narrator must consider the audience's point of view, relate events in a sequential order, provide sufficient description of events, and make causal relationships apparent (Petersen, 2011). The narrator must also employ metacognitive skills to evaluate the completeness of their story (S. L. Gillam & Gillam, 2016). Retelling a narrative taps further into cognitive skills as the narrator must also understand the original narrative well enough to retell it (see Spencer & Petersen, 2020).

Importance of Narrative Language

Several studies have demonstrated the predictive nature of early oral narrative language skills on later academic outcomes. For example, Wellman et al. (2011) found that children's early narrative retelling skills (ages 3–6 years) were predictive of literacy-related skills when the participants were older (ages 8–12 years). Specifically, they documented that children's early use of macrostructure in retelling a story was linked to later decoding of real words, reading comprehension, and written language, while their use of microstructure was predictive of decoding psuedowords (i.e., words that are not real but follow English phonotactic rules, such as *sark*). These patterns held for all participants involved in their study: children with a speech sound disorder, with or without co-occurring language impairment, and children considered typically developing. Similarly, Griffin et al. (2004) determined that typically developing children's narrative generation skills at the age of 5 years were related to literacy outcomes at the age of 8 years. The participants' descriptions of character states, such as saying a character was mad or thirsty, and use of modifiers or qualifiers (e.g., "a little bit farther," p. 128) were linked to reading comprehension scores, and their early use of plot structure and elaboration was predictive of later written narrative skills. Researchers have also demonstrated that the predictive nature of oral narrative language skills can extend beyond literacy. Feagans and Appelbaum (1986) found that for children with learning disabilities (ages 6–7 years), those with stronger oral narrative language skills performed better than those with weaker skills on mathematics achievement assessments in the subsequent 3 years. O'Neill et al. (2004) also examined the predictive nature of oral narrative language on math achievement. The researchers found that certain characteristics of children's narrative language (e.g., conjunction use and referring to a character's mental states) in a story generation task at the ages of 3–4 years were predictive of math achievement approximately 3 years later. This relationship was not found for the participants' performance on a general measure of language ability.

In addition to academic outcomes, oral narrative language has social importance, as producing narratives plays an important role in how we relate to one another. Children use narratives to relate to their peers (Petersen et al., 2008) and connect with their parents. Thus, difficulties with narrative language may negatively affect friendships for young children and decrease the dialogue between children and parents about school or other events (e.g., Nation et al., 2004). Because less proficient narrators are not as well accepted by their peers as compared to good narrators, they may be reticent to use oral narrative language. With fewer opportunities to practice and improve their narrative language, a social context Matthew effect could come into play (P. C. McCabe & Marshall, 2006; Stanovich, 1986).

Children at Risk for Narrative Language Difficulties

Children with diverse disabilities have been found to produce oral narratives that are quantitatively and/or

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qualitatively different (e.g., shorter, less complex, or incomplete) than those produced by their peers considered to be typically developing (Boudreau & Chapman, 2000; Fey et al., 2004; R. B. Gillam & Johnston, 1992). For example, Greenhalgh and Strong (2001) found that children with specific language impairment produced narratives with less literate language features, such as conjunctions (e.g., before, after) and elaborated noun phrases (e.g., "a hole in the ground," p. 116). Diehl et al. (2006) found that children with high-functioning autism spectrum disorder produced significantly less coherent narratives in story retell tasks compared to peers considered typically developing.

Students may also have difficulties producing the English oral narrative language expected in U.S. schools due to linguistic and cultural differences. Students from some cultural or ethnic backgrounds are accustomed to a narrative structure and style that is different from that which is expected in the classroom (Gee, 1989; Gorman et al., 2011; A. McCabe & Bliss, 2005). English language learners (ELLs) may encounter further challenges in producing narratives with complex microstructure, an indicator of oral narrative proficiency, as they are in the process of acquiring the English language (Hipfner-Boucher et al., 2015).

Impact of Oral Narrative Language Intervention

The extant research base on oral narrative language interventions provides evidence that such interventions can improve oral narrative language for children with *diverse learner characteristics*. In this report, we use *diverse learner characteristics* to refer to how children in studies vary in age, disability, socioeconomic status, language proficiency, and ethnic/racial backgrounds, among other characteristics.

For children with disabilities that affect language, multiple studies have demonstrated the potential of oral narrative language interventions to improve both production and comprehension. Oral narrative language interventions have been found to improve both the macro- and microstructural features of oral narratives for children with language impairment (e.g., S. L. Gillam, Gillam, & Reece, 2012; Hayward & Schneider, 2000; Hessling & Schuele, 2020). Students with autism spectrum disorder also maintained gains on measures of story knowledge and perspective-taking after relatively few intervention sessions (S. L. Gillam et al., 2015). Additionally, Soto et al. (2009) found that students using augmentative and alternative communication devices demonstrated significant growth in story and linguistic complexity after participating in narrative-focused instruction.

Oral narrative language interventions implemented at the classroom level have also demonstrated positive effects for both preschool and elementary school–age children (S. L. Gillam et al., 2014; Spencer et al., 2018). Students who are ELLs also appear to benefit from English narrative intervention, similarly to proficient English speakers (Spencer, Petersen, Slocum, & Allen, 2015), and these interventions have been used to improve communicative competence (Schoenbrodt et al., 2003).

Characteristics of Interventions Targeting Narrative Language

One of the many benefits of oral narrative language interventions is their adaptability. Within the context of narrative language, interventionists can target macrostructural features, such as identifying the problem and solution in a story, or microstructural features, such as the use of temporal conjunctions (Petersen et al., 2014). Oral narrative interventions can also vary in the type of narrative language solicited, for example, a story retell, a personal story generation, or a fictional story generation (Westerveld & Gillon, 2010). Oral narrative interventions can differ in focus, targeting narrative language comprehension, narrative language production, or a combination of both. In addition, narrative interventions can vary in the levels of verbal and visual supports they include.

Prior Syntheses

Petersen (2011) reviewed studies addressing narrative language interventions for preschool and elementary students with identified language impairments or learning disabilities, published between 1980 and 2008. Nine studies met the inclusion criteria, with a total of 167 participants. Petersen reported moderate-to-large effect sizes (d = 0.73–1.57) on measures of macrostructure for the reviewed studies. Although eight of the nine studies reported microstructure outcomes, few of the interventions described intentional instruction around syntax. Petersen's systematic review also included measures of study quality. His assessment concluded that only two of the nine studies met criteria for moderate/high quality, with all others ranked as low or moderate. Although most participants demonstrated positive growth after participating in an intervention, Petersen concluded that results should be interpreted with caution due to the small sample sizes and the lack of high-quality experimental procedures in the studies.

Favot et al. (2020) synthesized the results of 24 studies, including 326 participants, to examine the effects of oral narrative language interventions for children with language disorders. These 24 studies included 11 single-case design (SCD) studies, 10 group studies, one study with both SCD and group design elements, and two case studies. Favot et al. found moderate effects in the SCD studies and a range of effects in the group design studies providing adequate data, with Hedges's g of 0.58–1.23. Favot et al. also evaluated the included studies for quality. They concluded that the results of the SCD studies could be considered with some confidence but that the group design studies demonstrated low quality.

This review adds to the existing literature in a number of ways. In Petersen's (2011) seminal review, he defined narrative interventions by two criteria: including (a) oral language features modeled by a clinician in the context of an oral narrative and (b) the same type of oral language practiced by the participant. He also limited his participants to those with disabilities. Similarly, Favot et al. (2020)

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restricted their review to studies implementing explicit oral narrative language interventions with children with language disorders. In this review, we broadened the scope to include any intervention aiming to improve children's narrative language rather than exclusively focusing on explicit narrative interventions. We also did not limit the participants to those with an identified disability.

Research Questions

The purpose of this synthesis is to add to the breadth and depth of prior syntheses by including all interventions reporting narrative outcomes and providing meta-analyses of those outcomes. The specific research questions we sought to address were the following:

1. What are the characteristics (e.g., interventionists, settings, dependent variables, dosage) of interventions across studies with narrative language outcomes for school-age children in the United States?
2. To what extent are these interventions effective in improving narrative production and comprehension for children with a variety of learner characteristics?

Method

Study Selection

We conceptualized our study inclusion criteria using the participants, intervention, comparison condition, outcome measures, and settings (PICOS) framework, an extension of the patient, intervention, comparison, outcomes of interest (PICO) framework first explained by Richardson et al. (1995) and described further by the Cochrane Collaboration (McKenzie et al., 2020). As such, we considered study participants, intervention, comparison condition, outcome measures, and settings (see Supplemental Table S1 for PICOS inclusion criteria).

Searches

We searched three databases on September 12, 2019, to locate relevant studies: Academic Search Premier, PsycINFO, and Education Resources Information Center. These databases were chosen to cast a figuratively wide net to find relevant articles: Academic Search Premier is considered a top source for multidisciplinary research, PsycINFO is a main source for social and behavioral research, and Education Resources Information Center is a fundamental database for educational research (American Psychological Association, 2021; EBSCO Information Services, 2021a, 2021b). We limited the results to only include those articles published in English and in peer-refereed journals. We did not attempt to collect unpublished data, and no date limits were set. The electronic search strategy is shown in Supplemental Table S2. We did not preregister this protocol. We updated the search on May 30, 2020, using the same search strategy and within the same databases. We imported citations yielded from both searches into EndNote X9 (Clarivate Analytics, 2020) for management. In addition, we examined two previously conducted reviews on narrative language interventions (i.e., S. L. Gillam & Gillam, 2016; Petersen, 2011) and consulted two experts in the field to identify additional studies.

Identification and Selection of Studies

After deduplication, the first author screened all titles and abstracts to exclude those studies that did not meet inclusion criteria. The third author also independently screened 33% of the original set of articles and had 95% agreement with the first author. Both authors then completed an independent full-text review of the remaining studies. Discrepancies were resolved through discussion and consensus.

Data Extraction and Coding

The third and fourth authors double-coded the 40 articles that met inclusion criteria. Interrater reliability across studies was .95. Coding discrepancies were discussed, articles were reviewed again when necessary, and discrepancies were resolved by consensus. See Supplemental Table S3 for a list of data extracted.

Functional Relations

With SCD studies, researchers examine the resultant data to determine if a functional relation is evident between the independent and dependent variables or outcome behaviors of interest (Gast & Ledford, 2018). Such a relationship indicates that a change in the dependent variable is functionally or causally related to the independent variable. The second author evaluated each SCD to determine if a functional relation was observed based on What Works Clearing house standards (What Works Clearinghouse, 2014), specifically if there were at least three demonstrations of effect based on level, trend, variability, immediacy, overlap, and consistency without a demonstration of a noneffect. A secondary coder independently made functional relation decisions. They obtained 80% agreement, and discrepancies were resolved by consensus.

Assessment of Risk of Bias

The term *risk of bias* refers to the possibility that the results of a study could contain systematic deviations from the truth due to study design or outcome analysis and reporting. The first and sixth authors evaluated the group design studies using the revised Cochrane risk-of-bias tool (RoB 2; Sterne et al., 2019). They obtained 92% agreement, and discrepancies were resolved by consensus. The first and seventh authors assessed the SCD studies using the tool developed by Reichow et al. (2018), obtaining 77% agreement. Due to the relatively low agreement obtained, they consulted with one of the tool's developers regarding classifications of risk and resolved discrepancies by consensus.

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Statistical Analyses

Group Design Effect Sizes

Effect sizes for group design studies utilizing between-groups methods were calculated using Cohen's *d*, which reflects the standardized mean difference based on the posttest difference in means and the pooled posttest standard deviation. Of the 20 group design studies, 13 provided sufficient data for calculating effect sizes. For studies with multiple samples or time points, each sample or time point was treated as an independent study. Thus, effect sizes were calculated from a total of 16 independent studies. Two meta-analyses were completed for (a) narrative production outcomes and (b) narrative comprehension outcomes. *Narrative production* was operationally defined as orally expressing a narrative, and *narrative comprehension* was operationally defined as receptive understanding of a narrative, usually demonstrated by answering questions about the narrative. In cases where multiple narrative production or comprehension outcomes were reported, relevant outcomes were averaged together so that one narrative production and/or narrative comprehension effect size was reported for each study.

Effect sizes were weighted by the number of study participants, such that studies with a larger number of participants contributed more heavily to the final effect size obtained. We interpreted the effect sizes following Cohen's (1988) recommendations: small (0.2), medium (0.5), and large (0.8). Effect sizes are typically considered significant if the 95% confidence interval (CI) for *d* does not cross 0. The meta-analysis was conducted using the *metafor* package (Viechtbauer, 2010) for the R statistical computing environment. Heterogeneity was assessed using the Q, I^2, and τ^2 statistics. The Q statistic reflects the amount of heterogeneity, I^2 reflects the percentage of variation across studies that is due to heterogeneity, and τ^2 reflects the amount of true heterogeneity. I^2 values of 25%, 50%, and 75% are considered as low, moderate, and high proportions of heterogeneity, respectively (Higgins et al., 2003).

SCD effect sizes

To calculate effect sizes for the included case studies, raw data from each study were digitally extracted from published SCD graphs using Plot Digitizer (2015). The log response ratio (LRR; Pustejovsky, 2018) was calculated for the purpose of quantifying the magnitude of treatment effects for the SCD studies. For multiple-baseline designs, effect-size estimates were calculated separately for each baseline–intervention comparison, essentially for each tier. The LRR is a metric for comparing two mean levels by quantifying functional relations in terms of the natural logarithm of the proportionate change between phases in the level of the outcome (Pustejovsky, 2018). The LRR effect-size estimate is not appropriate for ordinal data; thus, nine studies were excluded from the meta-analysis because the narrative production outcome consisted of a rubric rating. We synthesized the LRR effect sizes using a multilevel random effects meta-analysis model, which included study-level and participant-level random errors. The standard deviation of the study-level random errors reflects the amount of heterogeneity across studies, and the standard deviation of the participant-level random errors reflects the amount of heterogeneity across participants within a study. We report the estimated average effect from the LRR model, the corresponding standard error, and a 95% CI. As measures of heterogeneity, we also report the estimated study-level and participant-level standard deviations in which larger standard deviations indicate greater variability in outcomes. For analyses, we used the *metafor* (Viechtbauer, 2010), *clubSandwich* (Pustejovsky, 2019), and *SingleCaseES* (Pustejovsky & Swan, 2018) packages in the R statistical computing environment.

Publication Bias Assessment

Publication bias was evaluated to determine whether findings may be influenced by including only studies with larger-than-average effects, which are more likely to be published. Publication bias was assessed by creating funnel plots and conducting an Egger regression test for funnel plot asymmetry (Egger et al., 1997).

Results

Study Selection

Of our original compilation of potential articles, 877 unique articles remained after deduplication. Please see the search results in Supplemental Table S2. We then screened their titles and abstracts and excluded 813 articles for not meeting inclusion criteria, leaving 64 articles. A full-text review of these articles resulted in 40 remaining articles that met eligibility criteria. We included 13 group design studies and 13 SCD studies that had adequate data for meta-analyses. A Preferred Reporting Items for Systematic Reviews and Meta-Analyses (Moher et al., 2009) flow diagram of the study selection is shown in Figure 1.

Study Characteristics

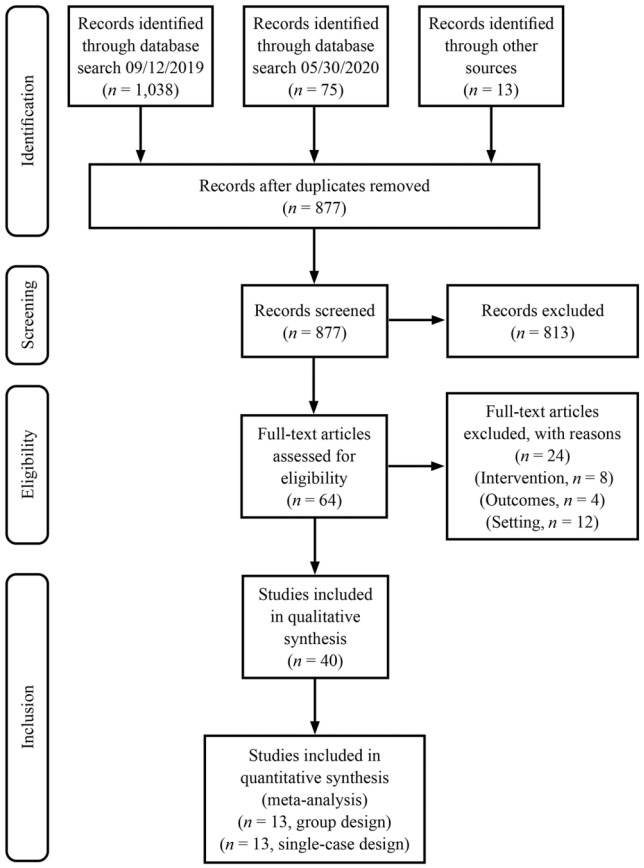
Of the 40 studies identified, 24 employed a group design and 16 used an SCD. Their publication years ranged from 1980 through 2020. Across all studies, there were 1,597 participants, with 941 receiving some form of intervention. The corpus of studies included participants with diverse learner characteristics, including participants with and without identified disabilities. Study characteristics are presented in Table 1.

Intervention Characteristics

Study reports varied in the completeness of their descriptions of the interventions implemented; thus, it is impossible to provide a comprehensive review of all the components represented. Nevertheless, there were several components that were common across many interventions. Half of the studies reported using a manualized or scripted intervention. Some of these manualized interventions were examined in several studies (e.g., *Story Champs*: Spencer &

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Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow diagram of study selection.



Petersen, 2012; *Supporting Knowledge in Language and Literacy*: S. L. Gillam, Gillam, & Laing, 2012). Over half of the interventions (k = 24, 60%) employed direct instruction of story grammar components (e.g., character, problem, solution). Visual supports were also commonly used, in the form of story grammar icons and/or pictures to support the retelling of a story. For example, both the *Supporting Knowledge in Language and Literacy* and *Story Champs* interventions employed story grammar icons so children could generalize story schema across different stories. Three studies reported using the *Story Grammar Marker*, a manipulative featuring story grammar icons that children can touch and manipulate. Over half of the studies reported using verbal supports, in the form of verbal prompts or recasts and expansions (k = 21, 52.5%), and over half the studies reported using authentic children's literature (k = 26, 65%). Some articles also reported use of activities requiring peer collaboration and games to keep children engaged and motivated. Eight of the studies had Spanish-speaking dual language learners or ELLs as their participants, and of these, five examined the use of a dual-language intervention or compared interventions implemented in English with interventions implemented in Spanish.

Narrative language in interventions. In the majority (k = 32, 80%) of the studies, the examined intervention required the participants to produce narrative language as part of the intervention, either a retell, a personal story generation, or a fictional story generation (see Supplemental Table S4). The most common type of narrative productions elicited in the interventions was story retell (k = 28, 70%). Ten studies (25%) examined interventions that included personal story generations, and 10 studies (25%) examined interventions that included fictional story generations. Fifteen studies (37.5%) examined interventions that included two different types of narrative language, with the most common combination being a story retell and a personal story generation (k = 8).

Eight of the studies (20%) did not require students to produce narrative language as part of the examined intervention but included narrative elements in other ways. One study looked at long-term effects of a day care program, so it was unclear what type of narrative language participants may have been prompted to produce throughout the course of the program (Feagans & Farran, 1994). Five of the examined interventions (i.e., Carnine & Kinder, 1985; Garner & Bochna, 2004; Green & Klecan-Aker, 2012; Khan et al., 2014; Stevens et al., 2010) provided explicit instruction on identifying story grammar components such as character and problem. Two studies used more implicit methods: One intervention involved additional small-group instruction on vocabulary initially exposed through shared book reading with the whole class (Fien et al., 2011), and one involved a listening comprehension and vocabulary intervention that also employed shared book reading (Henry & Solari, 2020). These studies met inclusion criteria because they examined narrative language as part of their outcome measures.

Narrative Language in Outcomes

In the majority of the studies (k = 35, 87.5%), a story retell was elicited from participants as part of the narrative language outcome measures. In 13 of the studies (32.5%), fictional story generations were elicited, and personal stories were elicited in 10 (25%) studies. Eleven of the studies (27.5%) had participants produce both a story retell and a fictional story, with the fictional story often to be modeled from the story retell. Six studies (15%) had participants produce both a story retell and a personal story, and one study had participants produce a personal story and a fictional story.

We examined the incongruity between the narrative language solicited as part of the intervention and narrative language measured as an outcome. Fourteen studies (35%) measured a type of narrative language as an outcome that was not explicitly practiced as part of the intervention.

Measures

In addition to narrative language, multiple studies also measured intervention effects on reading comprehension, literacy outcomes, expressive or receptive language, or vocabulary. Of those focusing primarily on narrative outcomes,

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Table 1. Included studies' characteristics.

Study	Design	Intervention	*n*	Participant characteristics (age: years;months)	Approximate dosage	Interventionist and setting
Adlof et al. (2014)	Group	T: structured narrative retell intervention C: code-focused literacy instruction	T: 4 C: 5	African American, low SES (*M* = 5;0, range: 4;1–6;10)	480 min across 12 sessions	Graduate students; child care center
Brown et al. (2014)	SCD	T: narrative retell with self-monitoring	T: 3	African American at risk for language disorders (4;4, 4;9, 4;11)	270 min across 16 sessions	SLP and graduate students; private school
Carnine & Kinder (1985)	Group	T1: schema based T2: generative based	T1: 13 T2: 14	Students with reading comprehension difficulties (Grades 4–6,[a] ~9;0–12;0)	475 min across 19 sessions	Teachers; elementary school
Feagans & Farran (1994)	Group	T1: abecedarian early intervention project (day care program) C: BAU	T: 45 C: 44 LPS: 64	Low SES (kindergarten,[a] ~5;0)	4–5 years (from 3 months until entered kindergarten)	Interventionists not described; day care
Fien et al. (2011)	Group	T: small-group reading booster instruction focused on vocabulary and comprehension C: BAU	T: 54 C: 52	Low language and vocabulary skills (first grade,[a] ~6)	320 min across 16 sessions	Teachers and paraprofessionals; elementary school
Freedman & Brooks (1980)	Group	T1: visual review throughout story book reading T2: visual review after storybook reading T3: drawing pictures throughout storybook reading T4: drawing pictures after storybook reading T5: visual review and retell throughout storybook reading T6: visual review and retell after storybook reading C: no review activities	T1–T6, and C: 66	Not described (*M* = 5;0)	Not described	Not described; preschool
Garner & Bochna (2004)	Group	T: Reading and Intensive Learning Strategies (Stevens, 1998) C: BAU	T: 35 C: 31	Not described (first grade,[a] ~6;0)	2,720 min across 160 sessions	Teacher; elementary school
S. L. Gillam, Gillam, & Reece (2012)	Group	T1: contextualized literature-based language intervention T2: decontextualized language intervention C: BAU	T1: 8 T2: 8 C: 8	With LI (*M* = 7;10, range: 6;0–9;0)	900 min across 18 sessions	SLP and graduate students; elementary school
S. L. Gillam et al. (2015)	SCD	T: SKILL	T: 5	With ASD (*M* = 9;8, range: 8;4–10;0)	Varied across participants, 19–33 sessions	Interventionist; university clinic
S. L. Gillam et al. (2014)	Group	T: SKILL C: BAU	T: 21 C: 19	Diverse characteristics[b] (*M* = 7;0, range: 6;6–7;4)	540 min across 18 sessions	SLP; elementary school
S. L. Gillam et al. (2018)	SCD	T: SKILL C: baseline conditions	T: 4 C: 2	With LI (*M* = 9;5, range: 6;7–10;4)	Varied across participants, 13–24 sessions	SLP; elementary school
Green & Klecan-Aker (2012)	Group	T: the Expression Connection program (Klecan-Aker & Brueggeman, 1991)	T: 24	With specific language learning difficulties (range: 6;3–9;6)	780 min across 26 sessions	Graduate student; campus laboratory school

(*table continues*)

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Table 1. *(Continued).*

Study	Design	Intervention	*n*	Participant characteristics (age: years;months)	Approximate dosage	Interventionist and setting
Henry & Solari (2020)	Group	T: adapted from Building Vocabulary and Early Reading Strategies (Solari & Ciancio, 2014) C: BAU	T: 22 C: 21	With ASD (range: 5;0–9;0)	2,730 min across 55–72 sessions	Special education teachers; elementary school
Hessling & Schuele (2020)	SCD	T: *Story Champs*[c]	T: 4	With LI (*M* = 8;4, range: 8;0–8;11)	Varied by participant, average of 18 min per session	SLP, graduate students; elementary school
Justice et al. (2008)	SCD	T: narrative-based language intervention (NBLI; Swanson et al., 2005) with *Story Grammar Marker*	T: 3	With hearing loss and cochlear implants (5;4, 7;6, 8;0)	Not described, for 6 weeks	Clinician; not described
Khan et al. (2014)	Group	T: story grammar instruction with student choice C: story grammar instruction without student choice	T: 14 C: 12	Considered typically developing (*M* = 3;10, range: 3;1–5;4)	100 min across eight sessions	Researcher; preschool
Klecan-Aker et al. (1997)	Group	T: the Expression Connection program (Klecan-Aker & Brueggeman, 1991) C: not described	T and C: 15	With learning disabilities (*M* = 7;2, range: 6;2–8;9)	1,080 min across 36 sessions	Researcher; school for children with learning disabilities
Lugo-Neris et al. (2015)	Group	T1: Language and Literacy Together (LLT) in Spanish T2: LLT in English	T1 and T2: 6	Spanish–English bilingual children at risk for LI, low SES (*M* = 6;8, range: 6;2–7;2)	900 min across 24 sessions	Graduate student; elementary school
A. McCabe et al. (2009)	Group	T: Reading–Writing–Remembering C: BAU preschool curriculum	T: 57 C: 39	Diverse characteristics[b] (*M* = 4;8)	520 min across 26 sessions	University students; preschool
McGregor (2000)	SCD	T: peer-to-peer retell with wordless storybooks	T: 4	African American English–speaking children (*M* = 3;9, range: 3;4–4;3)	200 min across 10 sessions	Clinician; preschool
Miller et al. (2018)	SCD	T: explicit story grammar instruction with *Story Grammar Marker*	T: 4	Spanish-speaking ELLs with LI (*M* = 9;8, range: 9;4–10;1)	Varied by participant, three 30-min sessions per week	Bilingual graduate student; elementary school
Miller et al. (2017)	SCD	T: Mis LIBROS (Literacy Intervention: Bilingual Reading and Writing Opportunities)	T: 3	Spanish-speaking ELLs (8;2, 8;9, 9;3)	Varied by participant, 30-min sessions, twice a week for 16 weeks	Bilingual graduate student; elementary school
Pakulski & Kaderavek (2012)	Group	T1: read-aloud and discuss story with reading buddy T2: read-aloud and discuss story with reading buddy, using manipulatives	T: 7 (within-subject design)	With hearing loss, with either hearing aids or cochlear implant (*M* = 10;2, range: 9;4–11;1)	80 min across four sessions	Teacher; school for children with hearing loss
Paris & Paris (2007)	Group	T: narrative strategy instruction C: language and poetry instruction	T: 83 C: 40	Diverse characteristics[b] (*M* = 6;7)	450 min across 10 sessions	Researcher; elementary school
Petersen et al. (2014)	SCD	T: individualized, systematic narrative language intervention	T: 3	With ASD (6;4, 6;6, 8;5)	420 min across 12 sessions	Clinician; university speech clinic

(*table continues*)

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Table 1. *(Continued).*

Study	Design	Intervention	*n*	Participant characteristics (age: years;months)	Approximate dosage	Interventionist and setting
Petersen et al. (2010)	SCD	T: adapted version of the Functional Language Intervention Program for Narratives (S. L. Gillam et al., 2008)	T: 3	With neuromuscular impairment, LI (6;3, 6;5, 8;1)	600 min across 10 sessions	SLP and board-certified behavior analyst; clinic
Petersen et al. (2016)	Group	T: *Story Champs*,[c] individual procedures C: BAU	T: 42 C: 31	Spanish–English bilingual children, some with LI (range: 5;11–9;8)	50 min across two sessions	Interventionists; elementary school
Schoenbrodt et al. (2003)	Group	T1: narrative intervention with read-aloud and *Story Grammar Marker*, in Spanish T2: narrative intervention with read-aloud and *Story Grammar Marker*, in English	T1: 6 T2: 6	Spanish–English bilingual children (range: 6;0–11;0)	Eight sessions	Clinicians; elementary school
Spencer et al. (2013)	SCD	T: *Story Champs*,[c] individual procedures	T: 5	With developmental delay; four Spanish-speaking (*M* = 4;9, range: 4;8–4;11)	300 min across 24 sessions	Interventionists; preschool
Spencer et al. (2020)	Group	T: Puente de Cuentos, dual-language narrative curriculum, with whole-group and small-group components C: BAU	T: 43 C: 38	Spanish-speaking ELLs, 3–5 (*M* = 4;2, range: 3;1–4;10)	Two whole-group sessions per week, four small-group sessions per week throughout the school year	Teachers and paraprofessionals; preschool
Spencer, Petersen, & Adams (2015)	Group	T: *Story Champs*[c] small-group procedures, in addition to whole-group instruction C: only whole-group instruction	T: 11 C: 10	Identified for Tier 2 language support based on dynamic narrative assessments (*M* = 4;2)	18 sessions across 9 weeks	Research assistants; preschool
Spencer et al. (2019)	SCD	T: dual-language intervention similar to *Story Champs*,[c] with embedded vocabulary instruction	T: 8	Spanish-speaking, low SES (*M* = 4;5, range: 3;6–5;0)	480 min across 24 sessions	Teachers and research assistants; preschool
Spencer, Petersen, Slocum, & Allen (2015)	Group	T: *Story Champs*[c] whole-group procedures C: BAU	T: 36 C: 35	Diverse characteristics[b] (*M* = 4;10)	210 min across 12 sessions	School psychologist and special educator; preschool
Spencer & Slocum (2010)	SCD	T: modeling and supported retell with icons and personal story generation	T: 5	With narrative language delays (*M* = 4;7, range: 4;3–5;1)	Varied by participant, 12 min per session, 4 times a week	School psychologist and SLP; preschool

(*table continues*)

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Table 1. *(Continued).*

Study	Design	Intervention	*n*	Participant characteristics (age: years;months)	Approximate dosage	Interventionist and setting
Spencer et al. (2018)	Group	T: *Story Champs*[c] with whole-group, small-group, and individual procedures C: BAU	T: 53 C: 52	Diverse characteristics[b] (*M* = 3;10, range: 3;1–5;1)	Whole group: two sessions a week for 4 weeks and then one session a week for 4 months Small group and individual: two sessions a week for 4 months	Teachers; preschool
Stevens et al. (2010)	Group	T: Story Structure Instruction C: storybook reading	T: 200 C: 121	Diverse characteristics[b] (kindergarten to second grade,[a] ~5;0–7;0)	15 min daily throughout the school year	Teachers; elementary school
Swanson et al. (2005)	Group	T: NBLI	T: 10	With LI (*M* = 7;10, range: 6;11–8;9)	900 min across 18 sessions	SLPs; varied: university language lab, child's school, or child's home
Tyler & Sandoval (1994)	SCD	T1: direct phonology instruction T2: indirect narrative intervention: retelling of narratives with expansion and recasting T3: combined phonological treatment with narrative retelling	T: 6	With language and phonological disorders (*M* = 4;0, range: 3;6–4;8)	900 min across 24 sessions	Not described; elementary school
Valentino et al. (2015)	SCD	T: storybook reading with prompted retell, with modified chaining	T: 3	With ASD (4;0, 7;0, 8;0)	Varied by participant	Experimenter; clinic
Weddle et al. (2016)	SCD	T: *Story Champs*[c] small-group and individual procedures	T: 7	Culturally and linguistically diverse, Latino (*M* = 4;2, range: 3;7–4;10)	280 min across 16 sessions	Research assistants; preschool

Note. T = treatment; SES = socioeconomic status; C = control or comparison; *M* = mean age; SCD = single-case design; SLP = speech-language pathologist; BAU = business as usual; LPS = local population sample; LI = language impairment; SKILL = Supporting Knowledge in Language and Literacy (S. L. Gillam, Gillam, & Laing, 2012); ASD = autism spectrum disorder; ELLs = English language learners.

[a]Age was not reported, so ages were estimated. [b]The term *diverse characteristics* is used to describe classrooms of children who have diverse racial/ethnic backgrounds, disability statuses, SES, and/or English language proficiency. [c]Spencer & Petersen, 2012.

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study design (SCD or group design studies) and intervention focus (macrostructure or microstructure) dictated measures used.

Measures of comprehension. Of the 40 studies meeting inclusion criteria, 11 included one or more measures of comprehension. Four studies assessed story comprehension: two using the Test of Story Comprehension (Spencer & Petersen, 2011) and two using the Assessment of Story Comprehension (Spencer & Goldstein, 2019). Two additional studies included informal or unnamed measures of listening comprehension and reading comprehension, respectively.

Measures of narrative production. Relatively few standardized, norm-referenced assessments of narrative outcomes exist in the field; thus, it was not surprising that a significant number of studies (k = 12) employed the use of researcher-made, informal measures or elected to use selected subtests from formal measures (k = 12). Measures selected reflected both study design and intervention targets.

Studies measuring changes in narrative macrostructure (k = 12) such as story grammar, narrative coherence, or organization most often used standardized instruments, some of which allow users to capture macrostructure and microstructure elements. The Narrative Language Measures (Petersen & Spencer, 2010) as a comprehensive measure or one of the subtests (i.e., Test of Narrative Retell, Test of Story Comprehension, Test of Personal Story Generation) was used in 11 studies. Three studies reported using the Monitoring Indicators of Scholarly Language (S. L. Gillam et al., 2016), which allows for examination of macrostructure and microstructure elements as a result of an intervention. Two studies used the Test of Narrative Language (R. B. Gillam & Pearson, 2004), in whole or in part, to assess participants' growth in narrative production and comprehension. One study used the Teacher Rating of Oral Language and Literacy (Dickinson et al., 2001) to assess oral language, reading, writing, and narrative quality.

When assessing the microstructure elements that increase syntactic complexity (e.g., conjunctions, verb tenses, clauses), researchers most often used language sampling. Participants were asked to retell or generate a story with or without picture prompts, and researchers used tallies of the NDW, the TNW, their mean length of utterance (MLU), and/or the number of T-units (i.e., clauses) as indicators of growth from pre- to postintervention. Please see Supplemental Material S1 for results of social validity and fidelity of implementation.

Functional Relations

Visual analysis of the level, trend, and stability of data across phases allows for the objective evaluation of treatment effects (Horner et al., 2012). Based on visual analysis, the coders identified strong evidence of a functional relation in 11 studies and moderate evidence of a functional relation in two studies. Eighteen comparisons resulted in no evidence of a functional relation.

Risk of Bias

Group design studies were evaluated for risk of bias using the RoB 2 (Sterne et al., 2019), and SCD studies were evaluated with the tool developed by Reichow et al. (2018). Two group design studies were excluded from these evaluations as their study design did not match the specifications of the RoB 2 tool: Green and Klecan-Aker (2012) and Swanson et al. (2005) used a pretest–posttest design with no comparison group. The risk of bias for each evaluated study is presented in Supplemental Figures S1 and S2, and a summary of risk of bias across all studies is presented in Supplemental Figures S3 and S4. All of the group design studies evaluated (k = 22) were determined to have *some concerns* for risk of bias, and the majority of the SCDs (k = 15) were assessed as having a *high risk* of bias: Of the SCD studies, only the S. L. Gillam et al. (2018) study was evaluated as having an *unclear risk*. Similar sources of potential bias appeared repeatedly across many studies. For example, in the domain of *selection of the reported results*, all of the group design studies evaluated were rated *some concerns* for not reporting a preregistered protocol. Likewise, the SCD studies had common patterns of ratings across studies, such as *unclear risk* for *sequence generation* (k = 16) and mostly *high risk* for *blinding of participants and personnel* (k = 12). These ratings were due to limited use of randomization and the close involvement of the researcher in the implementation of the intervention, characteristics that were common across the majority of the included SCD studies.

Meta-Analysis of Group Design Effect Sizes

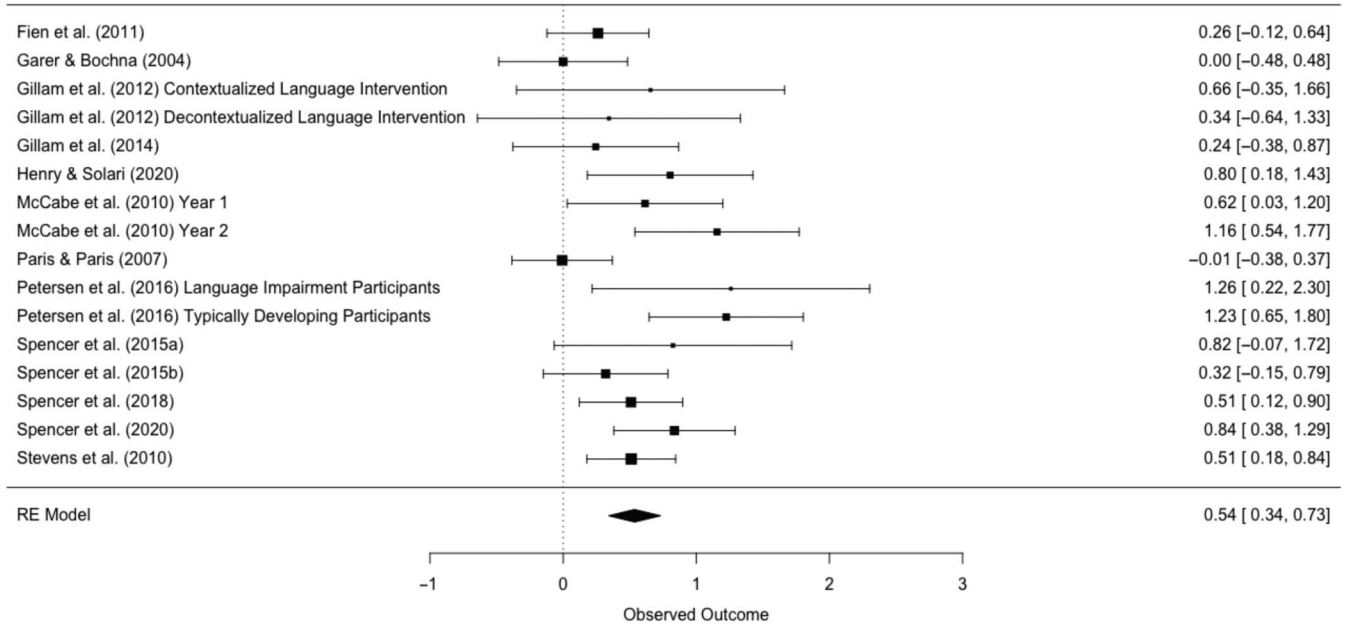
Two meta-analyses were completed for the group design studies examining (a) narrative production outcomes (see Supplemental Table S5) and (b) narrative comprehension outcomes (see Supplemental Table S6). In the case of significant results, positive effect sizes indicate a positive effect of narrative interventions and negative effect sizes indicate a negative effect of narrative interventions. Two studies included outcomes that combined narrative production and comprehension, and thus, the effect size for that outcome was excluded because it did not fit exclusively into either meta-analysis.

Narrative Production Meta-Analysis

The results from the narrative production meta-analysis are presented in Figure 2. For the group design studies, the narrative production sample included 28 effect-size estimates from 16 unique reports with between one and four narrative production outcome effect sizes per study. The overall weighted average effect-size across all 28 narrative production effect-size estimates was d = 0.54 (95% CI [0.34, 0.73], $p < .0001$). This reflects a positive, medium effect of narrative interventions on narrative production outcomes. Moderate heterogeneity was detected across the 16 reports (I^2 = 52.37%, τ^2 = 0.08). Based on follow-up moderator analyses, narrative

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Figure 2. Forest plot of narrative production group design studies.



production outcomes were not moderated by narrative elicitation context—retell versus generation ($Q = 1.93$, $p = .16$).

A funnel plot (see Supplemental Figure S5) was constructed to evaluate publication bias. Asymmetric funnel plots that depict most of the studies with strong, positive effects (i.e., depicted on the right side of the funnel) may indicate that findings are vulnerable to publication bias (Sutton, 2009). The relative symmetry of the funnel plot in Supplemental Figure S5 suggests that the narrative production finding was not significantly vulnerable to publication bias. Furthermore, there was no evidence of small study effects or publication bias based on an Egger's regression test ($z = 1.74$, $p = .08$).

Narrative Comprehension Meta-Analysis

The results from the narrative comprehension meta-analysis are presented in Figure 3. The narrative comprehension sample included 20 effect-size estimates from nine unique reports with between one and eight effect sizes per study. The overall weighted average effect size across all 20 narrative production effect-size estimates was $d = 0.51$ (95% CI [0.25, 0.76], $p < .0001$). This reflects a positive, medium effect of narrative interventions on narrative comprehension outcomes. A moderate level of heterogeneity was observed across the six studies ($I^2 = 56.3\%$, $\tau^2 = 0.08$).

The relative symmetry of the funnel plot in Supplemental Figure S6 suggests that the narrative comprehension finding was not significantly vulnerable to publication bias. There was no evidence of small study effects or publication bias based on an Egger's regression test ($z = 0.41$, $p = .68$).

Meta-Analysis of SCD Studies

Although we planned to similarly conduct two meta-analyses (narrative production and narrative comprehension outcomes) for the SCD studies, too few studies included narrative comprehension outcomes ($k = 1$) for a meta-analysis to be carried out. Thus, the results for the narrative production meta-analysis are reported below.

Narrative Production Meta-Analysis

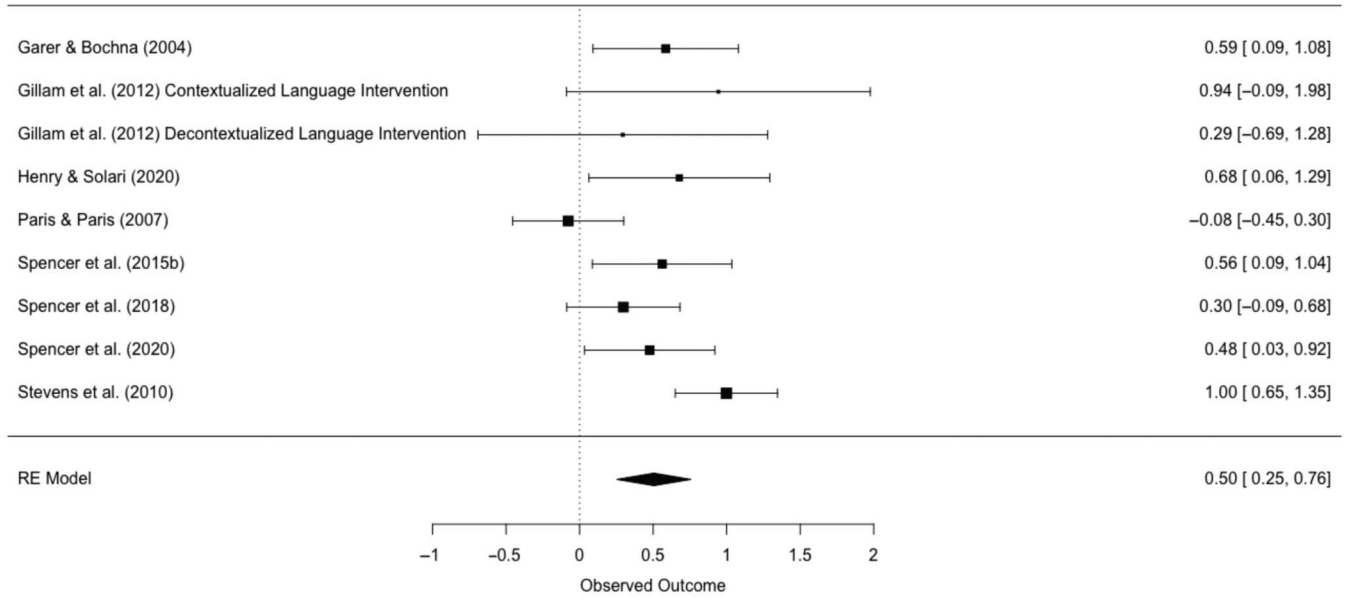
For the SCD studies, the narrative production sample included 38 effect-size estimates from six unique reports with between four and nine effect sizes per study. Six comparisons were removed due to zero-level variance in the effect-size estimate, and the data were reanalyzed. The narrative production outcomes for the remaining studies included NDW, TNW, MLU, and number of microstructure elements produced in oral narratives. It is important to note that these outcomes are all narrative microstructure indices, whereas indices for both narrative macrostructure and microstructure were analyzed for the group design narrative production meta-analysis. The average effect across all SCD comparisons was LRR = 1.28 ($SE = 0.50$, 95% CI [0.30, 2.26]). In regard to heterogeneity, high study-level variation ($SD = 1.17$) and high participant-level variation ($SD = 0.81$) were detected.

Discussion

In this review, we sought to examine all peer-reviewed studies on interventions that aimed to improve narrative language outcomes for preschool and elementary school–age

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Figure 3. Forest plot of narrative comprehension group design studies.



children in the United States. Our goal was to describe the characteristics of these interventions and synthesize their overall effectiveness on narrative comprehension and production via meta-analysis. We identified 40 studies, 24 group design and 16 SCD, published between 1980 and 2020. Common characteristics of the examined interventions are described above, and the results of the meta-analyses suggested positive, medium effects for narrative comprehension outcomes and positive, medium-to-high effects for narrative production outcomes.

This synthesis adds to the research base in several ways. First, we did not limit our inclusion criteria to participants with disabilities. This, combined with the additional research conducted since Petersen's (2011) seminal review, resulted in a large number of participants—1,597 across 40 studies. By broadening our participant criteria, we increased the possibility of generalization of the findings to other populations, including those not identified with a disability and students who are ELLs.

We also defined our interventions of interest more broadly and included any intervention that aimed to improve oral narrative language. Despite this wider umbrella, only eight studies (20%) did not explicitly require the participants to produce any form of narrative language as part of the intervention. The majority (80%) did require the participants to produce narrative language as part of the intervention, with story retells being the most commonly produced. These results are consistent with Petersen's (2011) finding that repeated narrative retellings and generations were the only commonality among the diverse practices found in the narrative interventions included in his review. In our review, six studies, however, assessed a type of narrative language different than that employed as part of the intervention. This may suggest that the researchers assumed generalization across narrative language types could occur.

Compared to prior syntheses, our corpus of studies also included more diversity in persons implementing the interventions, participants, settings, dosage, and outcome measures. Our review found only four studies were conducted in clinical settings, with the rest housed in school environments. Additionally, implementers in prior studies were most often speech-language pathologists, clinicians, or researchers. This review included nine studies where implementers were teachers and/or teaching assistants. The number of interventions performed in whole-group settings ($k = 8$) is also notable, whereas small-group intervention sessions had been identified as the primary mode of delivery in previous reviews. Also of note is the wide range of reported intervention dosages as well, with some studies reporting significant findings in a relatively small dosage of narrative language intervention (e.g., McGregor, 2000; Petersen et al., 2016; Spencer, Petersen, Slocum, & Allen, 2015).

Meta-Analytic Findings

High-quality meta-analyses are among the highest level of scientific evidence. Systematically assessing the results of previous research enables us in the fields of speech-language pathology and education as well as other related fields to derive conclusions about this body of research. Based on the group design studies, medium Cohen's *d* effect sizes were reported for narrative production outcomes ($d = 0.54$) and narrative comprehension outcomes ($d = 0.51$). A much larger effect size was reported for narrative production

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outcomes (d = 1.24) based on the SCD studies. Petersen (2011) reported moderate-to-large effect sizes for narrative macrostructure, ranging from d = 0.67 to d = 1.57, and noneffects to large effect sizes for narrative microstructure, ranging from d = −1.08 to d = 1.53. Favot et al. (2020) reported moderate effects from SCD studies and a range of effect sizes found in group studies, with Hedges's g of 0.58–1.23. Hedges's g effect sizes are interpreted in a similar way as compared with Cohen's d. The smaller average effect sizes in the current synthesis compared to Petersen's review could be attributed to how intervention was operationalized for the included studies. Petersen reviewed studies "that used oral narratives as a medium whereby language-related features were modeled by the clinician and practiced by the participant," whereas we reviewed any study that included narrative language outcomes. Larger average effect sizes were reported for interventions that provided explicit narrative language modeling and practice than for interventions that did not explicitly require narrative language production but included narrative language as an associated outcome variable.

In the context of our results, one possible explanation for the wide range of narrative production outcome effect sizes is the differing outcome measures included in each meta-analysis. In general, several different narrative production outcomes were reported across all the included studies (e.g., story grammar score, MLU, NDW, TNW). This wide range of narrative production outcome measures (macrostructure and microstructure) was captured in the meta-analysis of group design studies. However, the production outcomes measured using a rubric rating (e.g., Test of Narrative Retell; Spencer & Petersen, 2011), most commonly measures of macrostructure, are not appropriate for the SCD meta-analysis and thus were excluded. As a result, the outcomes included in the SCD meta-analysis reflect mostly microstructure measures of narrative production. Interventions that impact narrative language may have a larger effect on narrative microstructure than macrostructure. In future research, common measures of narrative production and comprehension should be included to allow for more homogeneous outcomes that can more reasonably be combined and meta-analyzed. We observed moderate heterogeneity across the analyzed studies, and thus, future inclusion of similar outcomes may lead to reduced heterogeneity across studies as well.

Despite the variability across outcome measures included in this synthesis, group design and SCD studies evaluating interventions that affect narrative language appear to complement one another and, collectively, cover the breadth of narrative outcomes. Although narrative comprehension was only evaluated in one SCD as a secondary outcome variable, narrative comprehension outcomes were evaluated across several group design studies, and significant treatment effects were observed. Researchers evaluated narrative production outcomes in group design and SCD studies. In group studies, narrative production outcomes rely on comparing aggregate data across study conditions (treatment and control). In SCD studies, narrative production outcomes rely on baseline logic in which the intervention is introduced in a time-lagged fashion to evaluate the effect across participants or behaviors. Both approaches attempt to minimize threats to validity to provide valuable information regarding treatment effect and generalizability. Another strength of the body of research reviewed here is the lack of publication bias as evidenced by the symmetry of the funnel plots and Egger regression tests. Thus, the findings do not appear to be influenced by publication bias. It is worth noting, however, that all of the group design studies were evaluated as having *some concerns* for risk of bias, and most of the SCD studies were evaluated as having a *high risk*, indicating that the reported effects may be inaccurate.

SCD Meta-Analytic Findings

The LRR effect-size estimates varied substantially (range: −1.70 to 4.94) across the SCD studies and did not always align with whether a functional relation was observed based on visual analysis. A functional relation was only observed for one of the SCD studies included in the SCD meta-analysis (Valentino et al., 2015). Notably, the effect-size estimates for this study (range: 1.15–4.94) were among the highest of those included in the meta-analysis. These data would suggest that failure to establish a functional relation within an SCD study does not necessarily indicate a weak treatment effect. This conclusion should be interpreted with caution due to the criteria used to determine whether a functional relation was established. The What Works Clearinghouse (2014) criteria for establishing a functional relation are dependent on whether there (a) are at least three demonstrations of effect based on level, trend, variability, immediacy, overlap, and consistency and (b) is not a demonstration of a noneffect. It may be the case that two demonstrations of an effect and one noneffect were observed in a study, which would result in the determination that a functional relation was not observed. In this case, large effect-size estimates may have been observed for the two demonstrations of effect.

Limitations

As our inclusion criteria were limited to studies conducted in the United States, the findings of this review are limited in their generalizability to interventions implemented in other parts of the world. Interventions implemented in other countries may be qualitatively different due to cultural norms related to narrative language and/or academic expectations. For example, some studies reported using peer collaboration and games to keep students motivated: This could be reflective of the educational culture found in the United States. Likewise, five studies reported findings related to interventions incorporating Spanish, which is the most common language among ELLs in U.S. public schools (Hussar et al., 2020). It is also possible that interventions targeting narrative language outcomes may result in effect sizes different than those found in our meta-analyses.

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Different effects could be due to language, cultural, or education factors that potentially influence the effect of interventions on narrative language growth (e.g., Westerveld & Heilmann, 2012). Future research can examine if similar patterns are found in intervention studies conducted outside the United States.

Conclusions

Findings from this corpus of studies suggest that measurable and lasting improvements in macrostructure and microstructure elements of narrative production can result from a variety of interventions even when provided with a relatively small dosage. Common trends found across interventions included manualized and/or scripted curriculum, explicit teaching of story grammar, and verbal and visual prompts. These interventions can be beneficial for children with diverse learner characteristics, including students who are ELLs and students without identified disabilities. Given that narrative retelling and recounting standards are included in the Common Core, it is likely that implementing interventions aimed to improve narrative language will be a continuing practice in U.S. schools. A promising finding from this review is that practitioners outside the specialized field of speech-language pathology can effectively implement narrative interventions (e.g., Spencer et al., 2018). Scripted or manualized curricula support successful implementation by teachers and paraprofessionals, potentially expanding the number of students who may benefit from narrative instruction.

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