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Oral Narrative Instruction Improves Kindergarten Writing

Megan S. Kirby , Trina D. Spencer , and Yi-Jui Iva Chen 

University of South Florida, Tampa, FL, USA

ABSTRACT

Writing is a critical literacy skill that emerges in kindergarten. The research literature has only addressed transcription skills of kindergarteners and has failed to address text generation. The purpose of this action-research study was to investigate the effect of oral language instruction that focused on narrative text structures on kindergarten students' ability to generate written narrative text. We conducted a concurrent multiple baseline design across three groups of students with two participants in each group. Students received six instructional sessions that involved the teacher modeling a story and supporting the students while they retold and generated oral stories. Pictures and icons were used to represent story grammar elements, but were faded within session to facilitate independent storytelling. The oral language instruction had an immediate positive effect on the narrative quality of students' writing. Individual and overall effects were significant and maintained three to four weeks later. Findings suggest an efficient causal relation between oral language instruction and writing quality.

Writing is a critical 21st century literacy skill and plays a conspicuous role across the lifespan. As children age and move beyond expressing wants in holiday wish lists and signing their name in cards, writing becomes a method of influence and a measure of achievement. Students with proficient writing skills can effectively communicate to others what they know and how well they know it. Furthermore, student writing can serve as an indicator of post-secondary success. In an increasingly competitive application process, most colleges and universities require written narratives and exams, evaluating student preparedness for higher-level cognitive demands. In the workforce, 82% of employers list written communication as a highly requisite job skill and use resumes, emails, and applications to evaluate applicants' writing skills (National Association of Colleges & Employers, 2019). Sadly, 23% of U.S. eighth grade students and less than 33% of high school seniors demonstrate proficient writing skills (National Center for Education Statistics, National Assessment of Educational Progress [NAEP], 2012¹). To prepare students with the literacy skills necessary for success in today's society, writing instruction must begin early and be effective for all students.

Early writing instruction

Most students are formally introduced to writing when they enter kindergarten. Very quickly, writing takes a prominent role in classroom activities and its importance is emphasized in grade

CONTACT Megan S. Kirby  megankirby@usf.edu  University of South Florida, 13301 Bruce B. Downs Blvd. MHC 1702, Tampa, FL 33612, USA.

¹As of 14 January 2021, NCES has not released a final report of 2017 NAEP writing assessment outcomes for any grade level.

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level standards. For example, by the end of their kindergarten year, students should be able to use a combination of drawing, dictating, and writing to narrate “a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened” (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010, p. 19). This means kindergarteners are expected to transition from single-letter formation to writing complete sentences that communicate a story in a single year.

From the theoretical perspective of a simple view of writing (Berninger, 1999; Berninger & Graham, 1998; Juel et al., 1986), the process of writing requires multiple skills: working memory, executive functioning, transcription (e.g., handwriting and spelling), and text generation (e.g., word choice, syntax, grammar, and text structure). All aspects of writing are needed to translate ideas into working memory and transfer information from working memory to paper or screen. Thought to develop in parallel (Berninger et al., 1996), transcription and text generation skills are particularly important to the writing of a cohesive and coherent story. As students acquire lower-level transcription skills, they also develop higher-order oral language skills necessary for text generation. The link between oral and written language is so well accepted that in a review of literature measuring writing in early childhood, Quinn and Bingham (2019) found ten studies that used oral retells as an alternative measure of young children’s text generation skills. For example, Hsieh et al. (2013) asked young children to “read” a wordless picture book and dictate their retell to an adult. The transcriptions were read back to the children to allow for revision of the written product measuring story retell. While research helps to establish the relationship between oral language and text generation, there is little evidence that this influences how early writing instruction is conducted (Campbell et al., 2018; Datchuk & Kubina, 2013; Korth et al., 2017; McMaster et al., 2017; Schrodт et al., 2019).

Early writing instruction typically is based on a linear theory of writing (Berninger et al., 1996; Flower & Hayes, 1981). From this perspective, writing develops in a predictable and sequential pattern (Berninger et al., 1997; Berninger & Swanson, 1994) and text generation is thought to emerge once proficient transcription skills are established (Graham et al., 1997; Puranik et al., 2020; Puranik & Al Otaiba, 2012). In what precious little time is made available to writing instruction, primary grade (K-2) teachers tend to focus on teaching transcription skills (Cantin & Hubert, 2019; Makdissi et al., 2019; Teale et al., 2020). Although legibility and spelling may increase text production and reduce effort needed to judge student writing, transcription training alone does not lead to improvements in other areas of writing (Graham et al., 2018). Therefore, if students have weaker transcription skills, teachers may sacrifice higher-level text generation, planning and revision instruction to provide more handwriting and spelling practice. To prevent emergent writers from being left behind, young students may benefit from writing instruction that facilitates the development of text generation skills regardless of handwriting proficiency. The question that remains is whether text generation skills can be enhanced through oral language instruction.

Narrative language

One type of oral language that may bridge oral language and literacy is narrative language (McCabe & Bliss, 2003). For example, longitudinal studies have found children’s narrative-based oral language and listening comprehension skills at age five directly contribute to reading comprehension skills assessed at 10 years of age (Babayigit et al., 2021; Hayiou-Thomas et al., 2010). Instruction in oral narrative language has been shown to significantly improve the reading comprehension skills of students in second through fourth grades (Clarke et al., 2010; Lervág et al., 2018). Narratives have been long considered a tool of metacognition that promotes connectivity between listening and reading comprehension (Short & Ryan, 1984).

Narratives are a familiar and accessible form of communication for children, and both oral and written narratives share similar linguistic features (Pinto et al., 2015). Narrative language also includes the ability to organize story elements in a meaningful, causal, and temporal sequence, a key part of text generation. Unlike informational structures that require explicit training due to their variety, complexity and unfamiliarity, there is a generally accepted pattern for stories (Duke et al., 2011). Moreover, narratives are ubiquitous in the lives and environments of young students (McCabe, 2017; Westby & Culatta, 2016), whereas informational structures do not become commonplace until later elementary years (Duke, 2000). Oral language interventions do not require students to have proficiency in informational genres (Traga Phillipakos, 2019). However, most of the research on writing has overlooked narratives and examined text-based interventions (Hebert et al., 2016; Pyle et al., 2017; Williams et al., 2014).

Supported by schema theory (Anderson, 1984; Mandler, 1984), the development of oral narrative language should also contribute to the development of written narrative skills. In a 2015 study, Kim et al. (2015) found that kindergarteners' oral language predicted their narrative writing skills in third grade. Based on the schema theory and correlational research, as students become proficient in oral narrative skills and aware of the shared story schema (Stein & Glenn, 1979), key narrative elements, such as story grammar (e.g., character, setting, problem, plan/action, consequence, ending), may transfer from oral to written language. If true, instruction that capitalizes on oral and written narrative structures could be used to teach text generation and hasten the development of writing among young students without requiring proficient transcription as a pre-requisite. In fact, there is emerging evidence that this may be true. Building upon numerous oral narrative language interventions that improve students' oral language skills, Spencer and Petersen (2018) investigated the oral to written language relationship. Indeed, they found that an oral narrative language intervention improved first graders' writing quality.

Purpose and research questions

What is known about writing instruction and the development of writing skills has been gleaned from intervention research with students in first grade or higher (Finlayson & McCrudden, 2020; Graham et al., 2012). However, to date, there are no writing intervention studies with kindergarten students that explicitly evaluate text generation outcomes (Graham et al., 2018; Kent & Wanzek, 2016). To address the dearth of kindergarten writing instruction research and to further document an oral to written language causal relationship, we replicated Spencer and Petersen (2018) study with kindergarten students. We hypothesized that teacher-implemented small group oral narrative language instruction would lead to improvements in kindergarten students' narrative text generation. Using an action research framework (Biancarosa & Snow, 2004; Creswell & Gutterman, 2019), we addressed the following questions:

1. What is the impact of low-dose, small group oral narrative language instruction on the quality of kindergarten students' narrative writing?
2. To what extent does oral narrative language instruction lead to maintained improvements in kindergarteners' narrative writing skills once instruction is withdrawn?

Method

Participants and setting

This study began in January of the academic calendar year in a mixed kindergarten-first grade general education classroom located in a western state. The classroom was led by a first-year teacher, dual-certified in elementary and special education. Kindergarten students were selected

for inclusion in the study based on their ability to consistently produce legible writing samples. Students unable to consistently produce interpretable writing samples were excluded because otherwise, we would not be able to measure written text generation. Oral retells could have been used as a proxy measure. However, several studies have already established the effect of oral narrative intervention on oral retells (Adlof et al., 2014; Brown et al., 2014; Petersen et al., 2016; Spencer et al., 2013). We were interested in taking this work a step further to investigate the impact on writing. While it was unnecessary to include students without a minimal level of transcription skills to answer our research questions, we expect that the results of this study would be relevant for promoting their text generation skills regardless of students' mastery of transcription. In total, six typically developing kindergarteners were selected to participate in the study from a total classroom sample of 22 students. All six kindergarten participants spoke English and came from middle-class backgrounds. Four of the six participants were identified as White, Non-Hispanic and two participants identified as Latino (Beth and Emi). Neither the teacher nor students had exposure to oral narrative instruction prior to the study.

Research design

To investigate the causal relationship between the introduction of the oral narrative instruction and the quality of the kindergarteners' writing samples, we conducted a concurrent multiple baseline design across three groups of students (Ferron & Scott, 2005). Group 1 included Hank and Beth, Group 2 included Carter and Zach, and Group 3 included Emi and Sam. Each group experienced baseline, intervention, and maintenance conditions (see Procedures below). The research team did not have access to the daily writing samples during the study. As a result of not being able to start the treatment condition according to baseline stability, we determined the most conservative approach was to randomly assign groups (Kratochwill & Levin, 2014) *a priori* to one of three baseline lengths: five, seven, or nine school days.

Practical action research framework

Since the research was initiated by the classroom teacher to improve her writing instruction, a practical action research approach was used in the design of the study. In an educational context, practical action research typically starts with a teacher or a group of educators identifying a specific problem within the school setting and implementing selected solutions (Creswell & Gutterman, 2019; Mills, 2018). For this study, the teacher initiated a partnership with the researchers for the purpose of using the results to inform her classroom writing instruction. She reported having no intentional or systematic method for teaching writing other than giving the students time to write and allowing them to ask the teacher how to spell words. Researchers provided consultation and support to the teacher as she identified research questions and an interest in using oral narrative language instruction to improve students' story writing.

Another advantage of practical action research is that it enhances the likelihood of results generalizing to practical classroom settings (Nugent et al., 2012; Postholm, 2020). For the current study, the teacher completed all of the instruction and collected students' writing samples to be scored later by researchers. She integrated study activities into the classroom's existing literacy block, in which she regularly provided students the opportunity to write stories and conducted small group reading instruction. Students were organized into small groups for literacy center rotations according to their reading levels and each reading group was composed of four to five kindergarten and first grade students.

Researchers provided ongoing planning and consultation (e.g., data collection and schedule phases), but were not present in the classroom, except for the first intervention session. While the practical action framework has several advantages, it resulted in some loss of experimenter

control over the procedures, particularly the direct and independent measurement of intervention fidelity and the fidelity with which she collected writing samples from her students.

Dependent measures

Writing quality was defined as the extent to which written samples reflect canonical narrative structure and complex language. The *Narrative Language Measures (NLM) Flow Chart* (Petersen & Spencer, 2019) is a scoring rubric with a decision-tree format that allows for quick scoring of narrative structure, language complexity, and writing conventions (see [Appendix](#)). It was developed to align with oral and written academic language expectations set forth by the Common Core State Standards (CCSS; National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). In research, the *NLM Flow Chart* has been used to detect incremental changes in children's oral (Spencer et al., 2013) and written (Spencer & Petersen, 2018) narrative language related to intervention. These studies documented adequate *NLM Flow Chart* scoring agreements (87–96%) and reliability correlations (.57–.69). In this study, it was not our purpose nor is it logical that an oral language instruction would improve students' transcription skills in just a few weeks. The teacher also allowed students to ask for spelling support. Therefore, students' writing samples were only scored for features related to text generation (i.e., Narrative Structure and Language Complexity scales) and not writing conventions such as punctuation, capitalization, and spelling.

Language complexity

The Language Complexity section of the *NLM Flow Chart* includes common linguistic features expected of elementary students' oral and written language. These include the following items: Relative Pronouns, Verb/Noun Modifiers, Vocabulary/Rhetoric, Temporal Ties, Causal Ties, and Dialogue. Except for Dialogue (which is scored on a 0–2 scale), Language Complexity items are scored on a 0–3 scale. Higher scores represent greater quantity and quality of those linguistic features in the language sample. A subscale score of the complexity of language included in the sample is calculated.

Narrative structure

The Narrative Structure section of the *NLM Flow Chart* highlights specific story grammar elements similar to and modeled after the story schema outlined by Stein and Glenn (1979). This section measures the presence or absence of an appropriate story sequence, as well as the clarity and completeness of the following story grammar elements: Character, Setting, Problem, Plan/Attempt, Consequence, Ending, and Emotion. Although most structural elements are given a score ranging between 0 (not present) and 3 (complete and clear), samples that include more than one Problem, Plan/Attempt, and/or Consequence are awarded an additional point for each additional component. Furthermore, the *NLM Flow Chart* is sensitive to variations in the magnitude of episodic complexity, with weight given to samples that include a minimum of two complete and clear episodic elements (i.e., Problem, Plan/Attempt, Consequence, and/or Ending). Episodic sophistication differentiates basic or incomplete stories from episodes that are more complex, while remaining clear and complete.

Composite scores

A composite writing quality score for a specific sample was obtained by summing the Language Complexity and Narrative Structure scores. Composite scores were graphed according to multiple baseline design conventions and are shown in [Figure 1](#). A composite score of 50 is possible at the

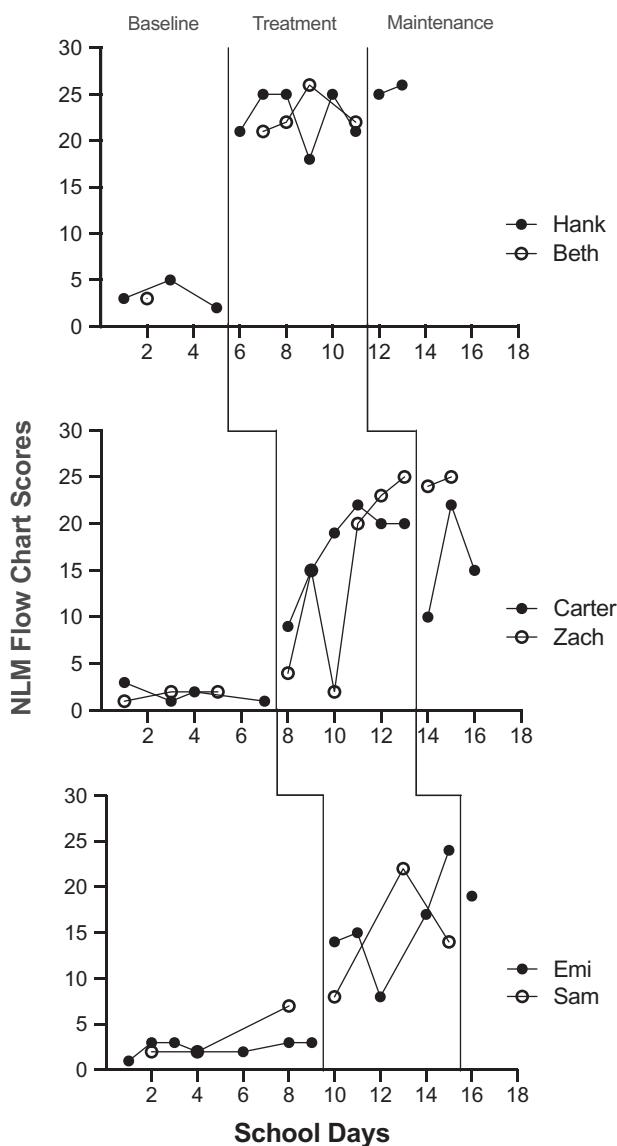


Figure 1. Results of Multiple Baseline Design Across Three Groups.

ceiling of *NLM Flow Chart*, with 33 points possible for Narrative Structure and 17 points possible for Language Complexity. However, students in this study produced writing samples ranging from 0 to 26 points. Because the *NLM Flow Chart* is designed for students in grades K-5, scores in this range are developmentally appropriate for kindergarten students and align with CCSS K-1 writing expectations.

Oral language instruction

A multi-tiered academic language program called *Story Champs* (Spencer & Petersen, 2018) was used for the oral narrative instruction. Several evidence-based practices of the program include modeling, explicit instruction of story grammar, visual and verbal scaffolding, and multiple opportunities for students to retell the model story. One of the critical features of *Story Champs*

Table 1. Steps of oral narrative instruction.

-
- 1 Teacher displayed picture cards and read the model story. She laid icons down as she read each part of the story.
 - 2 Teacher pointed to the icons and named the story grammar parts. Students repeated the story parts.
 - 3 Teacher distributed one or two icons to each student. Students individually retold the part(s) of the story based on their icons.
 - 4 Students retold the model story, one at a time. As students took their turns, visual materials were gradually withdrawn, first pictures then icons.
 - 5 Teacher redistributed the icons. Based on the icons each student received, they collectively generated a novel story as the teacher drew stick figures on the white board.
-

is the use of 24 carefully constructed stories that feature themes familiar to young children (e.g., falling and getting hurt, being a picky eater, losing a game, disagreeing with a sibling or friend) and contain complex academic language. Although *Story Champs* can be used flexibly with students from preschool to third grade, the stories written according to kindergarten standards were used in this study. These stories are 108–110 words in length and include the following story grammar elements: Character, Setting, Problem, Feeling, Action, Consequence, Ending and End Feeling. Stories are written to be equivalent in terms of linguistic complexity too (i.e., same number of subordinate and relative clauses). A set of five illustrated picture cards (3 inches by 5 inches, printed in color on laminated cardstock) accompany each story. Story grammar icons (1 inch in diameter, printed in color on cardboard circles), representing the main story grammar elements, are used in the lessons as visual supports. Although the picture cards are specific to each different story, the story grammar icons are applicable to all stories.

Every lesson followed the same steps but featured a different *Story Champs* story (See Table 1). Each lesson lasted approximately 20 minutes. In the first step, the teacher displayed the picture cards on the table in front of the students and read the model story. As she read each part, she laid a story grammar icon on the corresponding picture card. In the second step, the teacher pointed to the icons and named the story grammar parts. Students were asked to repeat the story parts (i.e., “Character, Setting, Problem, Feeling, Action, Ending, and End Feeling”). For step three, the teacher picked up the icons and distributed one or two icons to each student at random. Students individually contributed to a group retell based on their assigned story grammar part until the entire story was retold. At the end of the group retell, the teacher summarized the whole story to present a more cohesive model. In the fourth step, students retold the story, one at a time. For the student who retold the story first, the picture cards and story grammar icons were left on the table for reference. However, with each student retell to follow, the teacher systematically removed the pictures and then the icons. For example, the first student retold the story having access to both story grammar icons and picture cards, while the last student retold the same story in its entirety without a single visual support (picture card or icon). Finally, the teacher redistributed the icons to the students. Based on the one or two icons each student received, the students collectively generated a novel story as the teacher drew stick figures on the white board.

The teacher used a two-step prompting procedure to support individual students to retell each part. This involved first asking an open-ended question such as “Who was the story about?” or “What did he do to fix his problem?” If that level of prompting was successful, the student continued to retell the story. If it was unsuccessful, the teacher followed the question with a model and asked the student to repeat it. For example, “Hannah was walking downstairs. Now you say that.” Or, “Say it like this: *Hannah asked her sister if they could play together.*” The teacher used this prompting procedure only when necessary so that students retold the story as independently as possible.

Procedures

During a group’s baseline condition, students in that group did not receive the oral narrative instruction. Once the instruction phase began with each small group, the teacher delivered six oral narrative lessons (each lasting about 20 minutes) over a two-week period as part of students’

core instruction. Although not all students in the groups were research participants, they all received the instruction. Across baseline, treatment, and maintenance conditions, the teacher gave students opportunities to write stories. This practice occurred at the beginning of the literacy block, prior to small group rotations. Students were given writing paper and asked to produce a story based on a topic of interest or a general prompt (e.g., "Write about what you did last weekend."). They were accustomed to the task. Not all students were given writing practice on the same day, but most students were asked to write a story two to three times per week. Students absent from the classroom (or school) during the writing period did not produce writing samples at other times of the day; therefore, missing samples are considered missing at random.

Through email and phone calls, researchers provided the teacher with schedules and directions regarding when to begin and end phases for each group. Additionally, researchers directed the teacher to temporarily pause students' production of writing samples for a period of three to four weeks after each group's instruction ended. Then, after the break, students produced additional writing samples. The purpose of this was to document the extent to which the students' maintained their writing quality after three to four weeks without writing instruction or writing practice. As instruction started with Group 1, the second author demonstrated the first lesson as part of the teacher's training and explained how to use the step-by-step procedural checklist of the lesson to guide her instructional sessions (similar to those in [Table 1](#), but with more specificity). The teacher completed the lessons thereafter independently. No other training was provided. The teacher-maintained session logs to document the dates in which lessons occurred and followed the procedural checklist in every session to ensure adherence to the manualized procedures. Albeit self-report, the teacher completed all procedural checklist steps in all of the sessions (i.e., 100% self-reported fidelity). Not unusual for methods assuming an action research approach, the researchers were not involved in the daily implementation and did not conduct additional fidelity observations. Alternatively, researchers collected the log and completed checklists at the end of the study, along with the students' writing samples. The teacher ensured identifying information was removed and that each sample was dated properly before giving them to the researchers to score. The teacher did not score the writing samples because she was familiar with the students' work (and handwriting). Writing samples were de-identified and randomized during the measurement process to reduce the risk of bias in scoring participant writing samples.

Research assistant training and inter-rater reliability

The second author trained two research assistants to score the samples for this study. Following didactic training and practice, research assistants were required to achieve a minimum criterion of 85% scoring accuracy on a set of three writing samples unrelated to this study (range: 87–100%). Before the research assistants began scoring, the second author masked all samples by removing the dates and identification numbers. They were rearranged in a random sequence so that scorers could not identify the participant or condition to which the sample belonged. Only the second author had access to the identification keys. The primary scorer was given all of the samples to score and the secondary scorer was given a randomly selected subset (42%) of the samples to document scoring reliability. For the portion of samples scored by a second research assistant, point-by-point scoring agreement was calculated by dividing the number of agreements by the total number of scored items ($n = 14$), multiplied by 100. Mean scoring agreement was 96% (range: 87–100%).

Data analysis

To determine the causal relation between the oral narrative instruction and writing quality, we analyzed graphical displays of data according to level, trend, variability, and immediacy

(Kratochwill et al., 2010, 2014). Such analyses were conducted comparing students' responding in the treatment and maintenance conditions with baseline patterns of responding. We also calculated effect sizes to document the magnitude of the oral narrative instruction's impact on writing quality. Within-case effect sizes, which reflect practical significance for each student individually, are useful when comparing findings from multiple single case design studies. For the within-case effect sizes, we subtracted baseline means from treatment and maintenance means and divided each mean difference by within-case variability $\frac{Mean_T \text{ or } M - Mean_B}{SD_{within}}$ (Shadish et al., 2015). To allow for comparison of group results, we also calculated between-case effect size estimates using the R package, *scdhlm* (Pustejovsky et al., 2014). We used the code *effect_size_MB* (*outcome, treatment, id, time, phi, rho*) to calculate the between-case effect size (see Hedges et al., 2013 for a detailed estimation process). The statistical significance of effect sizes was derived using *z* statistics.

Results

A functional relation between oral narrative instruction and written narrative performance was examined through a concurrent multiple baseline design study across three groups of kindergarten students. Majority of the improvements in student writing were noted for Narrative Structure, with little to no increase (only 0–2 points) in Language Complexity. As a result, it was not helpful to graph the Language Complexity scores separately. We relied exclusively on the single *NLM Flow Chart* composite scores for analysis. Each participant's graphed composite scores are displayed in Figure 1. Several permanent product records of participant writing samples are provided in Figures 2 and 3. Across all three groups, visual analysis of individual observations revealed a functional relation between the oral narrative language instruction and written narrative skills, although the size of the effect varied across cases. Across participants, the corrected between-case effect size for the treatment condition was 2.85, with a standard error of 0.48. This effect was statistically significant; $z = 5.94$, $p < .001$, 95% CI [1.90, 3.79]. A more thorough description of group and participant-specific results are provided below. Within-case effect sizes are included in Table 2. Each participants' treatment and maintenance effect size estimates are considered large and meaningful (Cohen, 1988; Durlak, 2009).

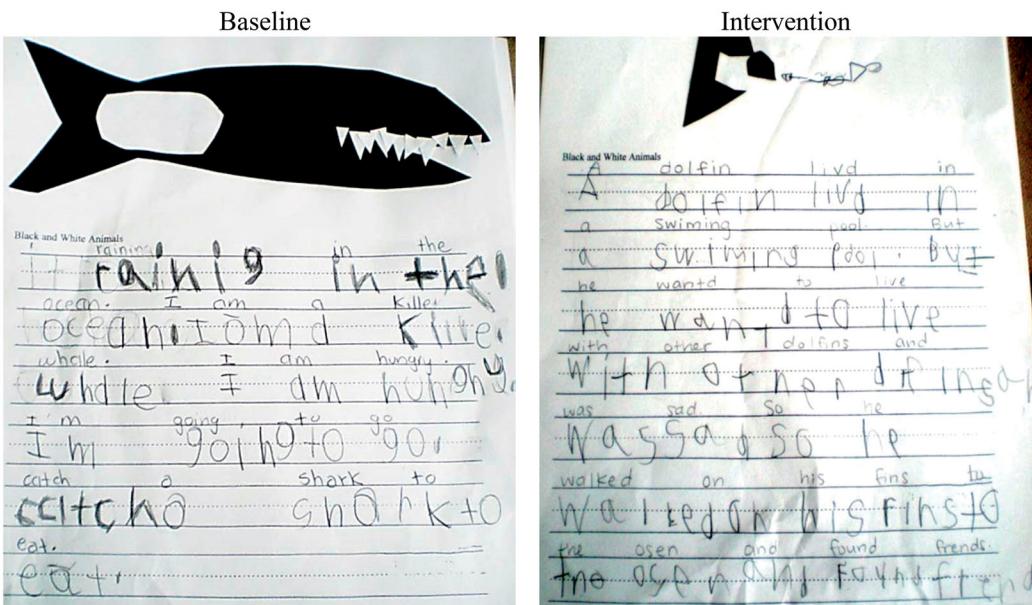
Table 2. Participant outcome means, standard deviations, and within-case effect size estimates by phase.

	Baseline <i>M</i> (<i>SD</i>)	Treatment		Maintenance	
		<i>M</i> (<i>SD</i>)	Hedges' <i>g</i> ES	<i>M</i> (<i>SD</i>)	Hedges' <i>g</i> ES
Hank	3.33 (1.53)	23.25 (2.95)	2.00	25.5 (0.71)	2.23
Beth	3.00 (0.0)	22.75 (2.22)	2.26	—	—
Carter	1.75 (0.96)	16.89 (4.79)	1.75	15.67 (6.03)	1.65
Zach	1.67 (0.58)	17.25 (9.79)	1.41	24.5 (0.71)	2.10
Emi	2.43 (0.79)	16.17 (5.77)	1.66	19.0 (0.0)	2.06
Sam	3.67 (2.9)	14.67 (7.0)	4.31	—	—

ES: Effect size; Within-case effect size (Hedges' *g*) corrected for bias.

Group 1: Hank and Beth

A total of four samples were collected during baseline for Group 1. Hank's written narrative performance was low and stable during baseline, with an average writing sample score of 3.33. Beth only produced one writing sample with a score of 3.0 during baseline, due to absences during writing periods scheduled by the teacher. Following the introduction of the intervention, a large and immediate increase in composite scores was noted for both participants. During the treatment phase, Hank's mean composite score was 23.25 and Beth's writing composite score average was 22.75. Neither participant's scores during intervention overlapped with scores reported during



Transcription:

"it raining in the. ocean. I am a killer whale I am hungry. I'm going to go. catch a shark to eat."

Transcription:

"A dolphin lived in a swimming pool. But he wanted to live with other dolphins and was sad so he walked on his fins to the ocean and found some friends."

Figure 2. Student Writing Samples from Baseline and Intervention Phases. Transcription: "it raining in the. ocean. I am a killer whale I am hungry. I'm going to go. catch a shark to eat." Transcription: "A dolphin lived in a swimming pool. But he wanted to live with other dolphins and was sad so he walked on his fins to the ocean and found some friends."

baseline. Across all participants and corrected for bias, Beth had the largest estimated within-case treatment effect size, Hedges' $g=2.26$. The estimated size of treatment effect for Hank was $g=2.0$. Following conclusion of the study, writing samples collected from Hank revealed that he maintained high levels of writing performance, averaging a composite score of 25.5. Hank's estimated maintenance effect size was $g=2.23$.

Group 2: Carter and Zach

Carter and Zach provided a total of seven samples during the baseline phase, with both students' writing samples scored at near-zero levels. Carter's average writing sample composite score at baseline was 1.75 and Zach's average was 1.67. Upon receiving the oral language instruction, both students showed an immediate improvement in writing performance, although the size of initial improvement varied by participant. Overall, Carter's average composite score during intervention was 16.89 and Zach's average score was 17.25. Variability in Zach's written performance during the first three intervention days influenced the overall average, as two samples were assigned scores of 2 and 4. However, his remaining intervention composite scores ranged from 15 to 25. Despite the influence of these outliers, Zach's treatment effect size estimate was $g=1.41$. Carter's estimated treatment effect was $g=1.75$. At follow-up, Carter continued to show improvements in

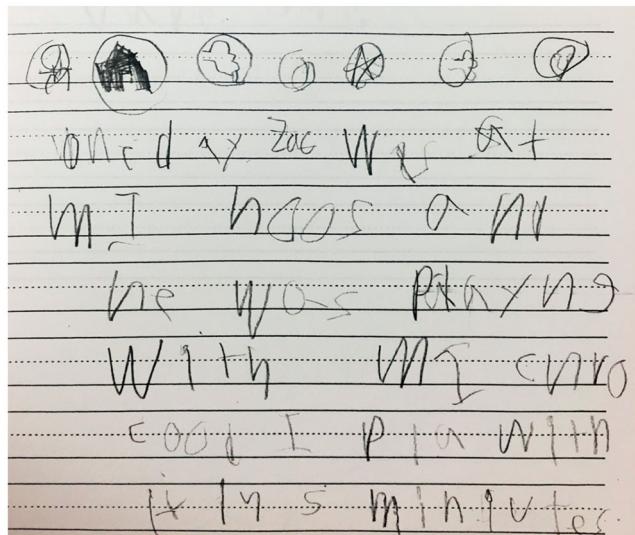


Figure 3. Post-intervention Participant (Carter) Writing Sample. Note. Participant spontaneously and independently drew story icons on their paper. Transcription: "one day Zac was at my house and he was playing with my [cnroc]. could I play with it in 5 minutes." On back of page (not shown), participant wrote: "ok. I was very happy."

narrative writing, with a mean maintenance score of 15.67 and an estimated maintenance effect size of $g = 1.65$. See Figure 3 for an example of Carter's writing at follow-up. Zach also demonstrated maintenance of treatment effects, with an average writing sample composite score of 24.50 post-intervention and maintenance effect size of $g = 2.10$.

Group 3: Emi and Sam

As shown in Figure 1, Group 3 had a baseline length of nine school days during which seven samples were collected from Emi and three from Sam. During baseline, Emi's average composite score was 2.43 and Sam's baseline level of written performance was 3.67. Both participants' composite scores increased with the introduction of the oral language instruction and there was no overlap between phases. The size of immediate effect varied by participant, but both students showed a positive level change. Emi's mean score during the treatment phase was 16.17, with an estimated treatment effect size of $g = 1.66$. Sam's average writing sample score during the treatment phase was 14.67 and the within-case treatment effect was estimated as $g = 4.31$ significant but small. One sample collected from Emi after withdrawal of treatment revealed a writing sample score of 19, slightly higher than the average composite score during the treatment phase. Emi's estimated bias-corrected maintenance effect size was $g = 2.06$.

Discussion

The aim of our study was to examine the extent to which oral language instruction had immediate and lasting effects on kindergarten narrative writing skills. Oral narrative-based instruction has been shown to lead to improvements in writing for first grade students (Spencer & Petersen, 2018). Until this study, the impact of oral language instruction on writing development had yet to be extended to kindergarteners. Furthermore, most kindergarten writing research focuses on teaching transcription, with little explicit instruction on other aspects of writing until students first develop handwriting fluency (Graham et al., 1997; Puranik & Al Otaiba, 2012). The design and results of our study offer an alternative instructional direction, suggesting that kindergarten

students can enhance their skills necessary for text generation before their transcription skills become proficient. The results from this study further support the schema theory related to narrative structure (Anderson, 1984; Mandler, 1984) as well as provide evidence that oral language is a significant contributor to writing quality (Kim & Schatschneider, 2017).

Our main finding was that brief, low-dose oral narrative instruction led to immediate improvements in kindergarteners' writing that continued to improve as students received more instruction. Prior to the narrative focused oral language instruction, the kindergarteners' writing samples had an average composite score of 2.64. Although the immediacy of effect varied by student, the average composite score during the treatment phase was 18.5. The growth was specifically linked to greater inclusion of key story grammar elements in student writing samples, with an example shown in [Figure 2](#). Our findings indicate that, when oral language instruction capitalizes on critical text structures such as story grammar, it is powerful enough to improve kindergarteners' writing.

Our second main finding is that oral narrative language instruction had lasting effects on kindergarteners' narrative writing. Samples collected several weeks after instruction ended revealed that gains maintained above baseline, suggesting that once the schema was acquired, it was firm in students' repertoires. Because there was no explicit instruction provided to students regarding how to write a story, the durable effects on text generation are remarkable. It should be noted that follow up samples were not available for two participants. Therefore, we suggest further research is needed to substantiate the long-term impacts of oral narrative instruction.

Because there was little to no improvements observed on the Language Complexity scale, we concluded that oral language instruction was too weak to impact sentence structure in written form. This finding is not surprising since the language complexity features such as temporal and causal subordination were not explicitly taught or prompted during instruction like story grammar was—only modeled by the teacher when she read the stories. In an oral narrative intervention study, Spencer and Slocum (2010) discovered that preschoolers rarely used complex language features in their oral narrative retells unless the use of words like *because*, *when*, and *after* were explicitly prompted (Spencer et al., 2013; Weddle et al., 2016). The lack of complex language improvements in our participants' writing may be because they were only emerging in their oral language repertoires or that transfer to writing requires explicit instruction of complex sentences. Because we did not also obtain oral language samples in the current study, we were unable to explore this further. Therefore, future research should examine the effects of intentionally teaching and prompting complex sentences and the extent to which these features are transferable from oral to written modalities.

Although the *NLM Flow Chart* documented no significant growth in Language Complexity, we view the ability to measure various aspects of writing essential for informing instruction and our knowledge of how writing develops. Scientists and practitioners alike continue to be hindered by a lack of reliable, user-friendly, and comprehensive tools available to measure multiple dimensions of young students' writing (Puranik et al., 2020). Because the *NLM Flow Chart* was designed to be used for oral and written language samples (Spencer et al., 2013; Spencer & Petersen, 2018), the focus of this tool was on the features that are shared across modalities. In this study, we did not measure transcription skills such as spelling because the teacher allowed students to ask how to spell words and because it was not logical that oral language instruction would increase spelling in just a few sessions. However, for writing research and practice to advance in primary grades, further developments in the assessment of writing are needed (Coker & Ritchey, 2014; Ritchey & Coker, 2014). To be able to inform instruction and serve as research outcome measures, there is a significant need for writing assessment tools to include metrics for multiple dimensions of writing (e.g., text structures, sentence structures, and transcription skills). The *NLM Flow Chart* can measure text and sentence structures in written form. A mean scoring agreement of 96% suggests that it can be used reliably to document a student's present level of

narrative writing performance, as well to track their development over time. Nonetheless, this assessment tool requires further development and research. In addition to examining the sensitivity of the Language Complexity subscale, future research should include the scoring of students' spelling, punctuation, and capitalization alongside text and sentence structures.

Limitations

The *Story Champs* oral language instruction shows potential for enhancing early learners' writing quality as it relates to narrative structure. However, these findings must be interpreted with limitations in mind. For example, we developed the study design *a priori*, to include randomization of baseline lengths assigned to different groups. On pre-selected data collection dates, if students were absent from the classroom during scheduled writing periods, no other opportunity was provided to the student to produce a sample. Although it was important to maintain consistency in the methods for collecting writing samples, the natural consequences of conducting research in schools and classrooms with minimal disruption to the teacher's routines limited the number of writing samples that were available.

In addition, an action research approach was used in the design of the study. Therefore, procedures did not include programming for an independent observer to measure, track, and respond to the teacher's ability to implement *Story Champs* lessons with fidelity. Rather, keeping with action research traditions (Biancarosa & Snow, 2004), we relied on up front training and the teacher's self-monitoring during each session to ensure manualized lesson implementation. Although a lack of independent observer is considered a limitation in most single-case research designs (Kratochwill et al., 2013), the results of the study suggest that the teacher utilized the training and checklists as the students' writing outcomes improved markedly following the introduction of the oral narrative instruction. Ruling out chance, the effects were also visible across all three groups of students.

Implications

The statistically significant improvements in kindergarteners' narrative writing abilities and the large effect sizes provide evidence of the power of explicit oral language instruction on the development of text generation in written form. During the intervention, the students were exposed to multiple exemplars of the targeted narrative schema through the introduction of unfamiliar stories each day. Thus, the focus of instruction was not mastery of any specific story (i.e., rote memorization) but procedural knowledge, such as story pattern recognition (e.g., story sequence and story grammar). Unexpectedly, a few students spontaneously and independently drew representations of the story grammar icons on their papers during writing activities (see Figure 3). The icons, whether used during oral language instruction or self-drawn during independent writing activities, prompted students to remember to include key story grammar elements in their narratives. We found this to be exciting evidence of schema activation while writing, even though the students had never been told to use the story grammar organization for writing. This suggests that the teaching methods worked as hypothesized. Mastery of the narrative schema during the oral language instruction is likely to have mediated students' generalization from oral to written output (Anderson, 1984; Mandler, 1984).

Preparing students to become effective communicators across their lifespan requires dedicated time to writing instruction in the classroom. However, in a survey of Canadian K-6 elementary school teachers, only 57% of respondents reported explicitly teaching writing in their classrooms and less than half of those teachers used a specific program of instruction to support their students' acquisition of handwriting skills (Makdissi et al., 2019). When early writing instruction focuses exclusively on visible and salient handwriting skills, students with delayed decoding and

transcription skills may be left out of more complex language instruction needed for reading comprehension and written composition. There is small but important causal evidence connecting oral narrative instruction to reading comprehension improvements (Clarke et al., 2010; Lervág et al., 2018), but research linking oral language instruction to writing outcomes is almost non-existent (Spencer & Petersen, 2018; Traga Philippakos, 2019). Nonetheless, this study provides additional evidence of a functional relation between oral language skills and written narrative skills. Given that the structure of oral narrative language maps to both reading and writing, the shared knowledge theory (Shanahan, 2006) posits that there is an efficient path from oral narrative instruction to writing composition and reading comprehension outcomes (Lervág et al., 2018; Shanahan, 2006, 2016). Therefore, we recommend that researchers and teachers use multi-faceted oral language instruction to facilitate the development of reading and writing simultaneously (Troia & Olinghouse, 2013) and that oral language instruction should not be delayed until students' transcription skills are proficient. It is possible to build narrative text structures, needed for story reading and writing, before students can read and write. This is particularly critical for students with delayed or disabled decoding or transcription skills because without oral language instruction, they will have few opportunities to generate text and identify the narrative structures in the written language. Importantly, oral language instruction must go beyond vocabulary and grammar to teach powerful text generation skills such as text structures, perspective taking, and inferencing (Kim & Schatschneider, 2017), all of which are vital to young students' development of oral and written narrative competencies.

Disclosure statement

The second author reports a conflict of interest. She receives financial benefits related to the sale of the oral narrative language program examined in this study.

ORCID

Megan S. Kirby  <http://orcid.org/0000-0002-6803-5360>
 Trina D. Spencer  <http://orcid.org/0000-0002-3531-8276>
 Yi-Jui Iva Chen  <http://orcid.org/0000-0001-9845-5764>

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Appendix

Figures: Narrative Language Measures (NLM) Flow Chart (for Appendix).

NLM Flow Chart

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Child Name/ID#: _____
Grade: _____ Teacher: _____
School: _____

Examiner/Transcriber/Scorer: _____

YEAR	MO	DAY
Date Tested		
Date of Birth		
Child's Age:		

Language Complexity Score: _____
Narrative Structure Score: _____
Punctuation Score: _____
Capitalization Score: _____
Average Word Rating: _____

TOTAL SCORE: _____
([L + NS])

WRITING CONVENTIONS (OPTIONAL)

PUNCTUATION			CAPITALIZATION			SPELLING		
Number of words written		Number of errors ●	Number of words written		Number of errors ●	Sum of word ratings		Rating Scale
PUNCTUATION SCORE <i>Subtract number of errors from total number of words written.</i>			CAPITALIZATION SCORE <i>Subtract number of errors from total number of words written.</i>			AVERAGE WORD RATING <i>Divide the sum of word ratings by the total number of words written.</i>		
Calculate Errors <i>Add up all punctuation errors (up to 3 for each type) for which punctuation was needed and was used incorrectly (0 = not needed).</i>			Calculate Errors <i>Add up capitalization errors (up to 3 for each type).</i>			Rate each word in the written sample using the rubric below.		
Period at end of sentence	①	②	③	①	②	③	① Unconventional symbol. Contains vertical line, dot, circle instead of letter or number. ② Conventional symbol. Contains at least one real letter or number but is unrecognizable as a word. Examples: "4", "7", "15", "B3n". ③ Phonetic representation. Contains one or more letters that are phonetically related to a recognizable word. Examples: "ab" or "bat" for bird, "f" for fan.	
Question mark	①	②	③	①	②	③	④ Invented spelling. Contains two or more letters that represent a single phonetic sound or a single letter. Must have a vowel and be easy to figure out. Examples: "air" for bird, "got" for get.	
Apostrophe	①	②	③	①	②	③	④ Conventional spelling. Spelled correctly.	
Quotation mark	①	②	③	①	②	③		
Comma in a list	①	②	③	①	②	③		

LANGUAGE COMPLEXITY

RELATIVE PRONOUNS	VERB/NOUN MODIFIERS	VOCABULARY/RHETORIC	TEMPORAL TIES	CAUSAL TIES	IALOGUE
3+ instances of relative pronouns immediately after nouns (that, who, which, who's) (e.g., My friends, who come to my house, on very nice days.) YES ③ NO ○	1+ instances of 2 consecutive descriptive modifiers (e.g., the big dog). 2+ instances of single descriptive modifiers before a verb or a noun (e.g., We took our for the tall trees. We quickly climbed the ladder.) YES ③ NO ○	3+ less-common words/idioms/analogies/metaphors/similes (e.g., the new oranges her gaze was sky). 1 instance of single descriptive modifier before a verb or a noun (e.g., We climbed the ladder early). 2+ instances of single descriptive modifiers after a verb (e.g., We climbed the ladder early). YES ② NO ○	3+ instances of temporal words (that are often used in complex sentences) (when, after, before, while, as, until). 1 less-common words/idioms/analogies/metaphors/similes (e.g., He tandem skied as night). 1 instance of a temporal word (that is often used in complex sentences) (when, after, before, while, as, until). YES ① NO ○	3+ instances of causal words (that are often used in complex sentences) (because, so that, since, unless, although, even though). 2 instances of causal words (that are often used in complex sentences) (because, so that, since, unless, although, even though). 1 instance of a causal word (that is often used in complex sentences) (because, so that, since, unless, although, even though). YES ② NO ○	2+ instances of dialogue; either 2 speakers or 2 separate instances of the same speaker 1 instance of dialogue YES ② NO ○
2 instances of relative pronouns immediately after nouns (that, who, which, who's) (e.g., My friends, who have two rooms.) YES ② NO ○	1 instance of single descriptive modifier before a verb or a noun (e.g., We took our for the tall trees.) 2+ instances of single descriptive modifiers after a verb (e.g., We climbed the ladder early). YES ② NO ○	2 less-common words/idioms/analogies/metaphors/similes (e.g., He tandem skied as night). 1 instance of a temporal word (that is often used in complex sentences) (when, after, before, while, as, until). YES ① NO ○	2 instances of temporal words (that are often used in complex sentences) (when, after, before, while, as, until). 1 instance of a temporal word (that is often used in complex sentences) (when, after, before, while, as, until). YES ② NO ○	2 instances of causal words (that are often used in complex sentences) (because, so that, since, unless, although, even though). 1 instance of a causal word (that is often used in complex sentences) (because, so that, since, unless, although, even though). YES ① NO ○	2+ instances of dialogue; either 2 speakers or 2 separate instances of the same speaker 1 instance of dialogue YES ② NO ○
1 instance of relative pronoun immediately after noun (that, who, which, who's) (e.g., We built a fort, which was needed for a snowball battle.) YES ① NO ○	1 instance of single descriptive modifier after a verb (e.g., The dogs ran quickly). YES ① NO ○	1 less-common words/idioms/analogies/metaphors/similes (e.g., he went to the down). YES ① NO ○	1 less-common words/idioms/analogies/metaphors/similes (e.g., he went to the down). YES ① NO ○	1 instance of a causal word (that is often used in complex sentences) (because, so that, since, unless, although, even though). YES ① NO ○	2 different emotions FIMW/Fem (e.g., sad + happy). 1 emotion FIMW/Fem (e.g., sad). general emotion or emotional behavior FIMW/Fem (e.g., mad or (cont'd)) YES ③ NO ○

LANGUAGE COMPLEXITY SCORE: _____

NARRATIVE STRUCTURE

CHARACTER	SETTING	PROBLEM	PLAN/ATTEMPT	CONSEQUENCE	ENDING	EMOTION
Retell OK YES ③ NO ○ proper noun for main character's name (or approximation) and a proper or general noun for 1+ secondary character (e.g., John and his mom). Or general nouns for main character and 3+ secondary characters FIMW (e.g., boy, dog, fog, bear, spider, wolf) NO	Generation personal generation first person pronoun and proper noun (e.g., I & John) fictional generation 2+ proper nouns (e.g., John & Hilary) YES ③ NO ○ personal generation first person pronoun and general noun (e.g., I and boy; me and my mom) fictional generation general noun (e.g., John) YES ② NO ○ personal generation first person pronoun or general noun (e.g., I or boy) fictional generation general noun (e.g., boy) YES ① NO ○ general noun only for main character (e.g., boy, sister, bed) no character, only pronoun(s) (e.g., he, she, it) YES ① NO ○	all of following explicitly stated: time, activity, location FIMW: (e.g., night/night/morning + bedroom; wake up + bedroom; wake up + bedroom) Gen: (e.g., today + skateboard/skateboarding + park) YES ③ NO ○ 2 of following explicitly stated: time, activity, location FIMW: (e.g., night/night/morning + bedroom; wake up + bedroom) Gen: (e.g., today + skateboard/skateboarding + park) YES ② NO ○ 1 of following: time, activity, location FIMW: (e.g., night/night/morning + bedroom; wake up + bedroom) Gen: (e.g., today + skateboard/skateboarding + park) YES ① NO ○ incomplete or unclear FIMW: (e.g., he went to bed) Gen: (e.g., could do it) YES ② NO ○ implied FIMW: (e.g., he wanted for fog) Gen: (e.g., needed because) YES ① NO ○ complete and clearly by secondary character FIMW: (e.g., dog looked for fog) Gen: (e.g., brother helped me skateboard/brother decided to skateboard) YES ③ NO ○ incomplete or unclear related to attempt or problem FIMW: (e.g., he got it) Gen: (e.g., I got help) YES ② NO ○ consequence-like info not related FIMW: (e.g., his dog came to him after he got his hat) Gen: (e.g., my mom went to) YES ① NO ○	2+ 1 complete and clear FIMW: (e.g., hog gone) Gen: (e.g., was falling off the skateboard) YES ④ NO ○ incomplete or unclear FIMW: (e.g., brother helped me skateboard/brother decided to skateboard) Gen: (e.g., brother helped me skateboard/brother decided to skateboard) YES ④ NO ○ complete and clearly by primary character FIMW: (e.g., dog looked for fog) Gen: (e.g., brother helped me skateboard/brother decided to skateboard) YES ④ NO ○ incomplete or unclear by any character FIMW: (e.g., he went outside) Gen: (e.g., I talked to my brother; I made a plan) YES ② NO ○ plan/action not related to problem FIMW: (e.g., he asked for his dog) Gen: (e.g., I had a picture I decided to take a picture) YES ① NO ○	2+ 1 complete and clear related to attempt or problem FIMW: (e.g., hog gone) Gen: (e.g., brother helped me skateboard/brother decided to skateboard) YES ④ NO ○ incomplete or unclear FIMW: (e.g., he went outside) Gen: (e.g., I talked to my brother; I made a plan) YES ④ NO ○ consequence-like info not related FIMW: (e.g., his dog came to him after he got his hat) Gen: (e.g., my mom went to) YES ① NO ○	complete and clear FIMW: (e.g., he took baby fog home) Gen: (e.g., I had fun skateboard) YES ③ NO ○ incomplete or unclear FIMW: (e.g., he went outside) Gen: (e.g., I got help) YES ② NO ○ incomplete or unclear FIMW: (e.g., he went outside) Gen: (e.g., I talked to my brother; I made a plan) YES ② NO ○ consequence-like info not related FIMW: (e.g., his dog came to him after he got his hat) Gen: (e.g., my mom went to) YES ① NO ○	2 different emotions FIMW/Fem (e.g., sad + happy). 1 emotion FIMW/Fem (e.g., sad). general emotion or emotional behavior FIMW/Fem (e.g., mad or (cont'd)) YES ③ NO ○
Character complexity score: _____	Setting complexity score: _____	Problem complexity score: _____	Plan/attempt complexity score: _____	Consequence complexity score: _____	Ending complexity score: _____	Emotion complexity score: _____
(ONLY SHADED POINTS qualify for episode complexity score)						
*EPISODE COMPLEXITY						
3+3						
4+2 or 4+3 or 4+4 or 3+3+2						
4+3+2 or 3+3+3						
4+3+3 or 3+3+3+2						
4+4+3 or 4+3+3+3						
4+4+4 or 4+4+3+2						
4+4+4+2						

Narrative Language Measures

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