

Narrative Discourse Intervention for School-Aged Children With Language Impairment

Supporting Knowledge in Language and Literacy

Sandra Laing Gillam and Ronald B. Gillam

Narrative language proficiency is a critical contributor to academic success for school-aged students. This article presents a narrative language intervention, Supporting Knowledge in Language and Literacy (SKILL), that is based on research in the fields of developmental psycholinguistics and discourse processing. SKILL was designed to provide school-age children with language learning difficulties with the cognitive and linguistic skills that underlie narrative comprehension and composition. A comprehensive description of the intervention program is presented first, followed by a summary of the qualitative and quantitative evidence supporting its use. Quantitative results from summarized studies show that SKILL is associated with consistently moderate to large effect sizes for improving narrative proficiency, ranging from 0.66 to 2.54 for students with language learning difficulties aged 5–11 years, and from 1.63 to 5.11 for students with autism spectrum disorders aged 8–12 years. Narrative intervention has the potential to have lasting effects that generalize to new stories and new story comprehension and production contexts (such as reading and writing) if children attain the critical cognitive and linguistic skills that support narration.

Key words: *autism, intervention, language impairment, narrative, school-age, SKILL*

Author Affiliation: *Language and Literacy Clinic, Utah State University, Logan.*

The program and research discussed in this article were supported in part by a grant from the Institute for Educational Sciences, National Center for Special Education Research (Award No. R324A100063).

The authors of this article disclose that they are authors of the SKILL program, which is described in this article, and for which they receive royalties from Utah State University. Ronald Gillam also is an author and receives royalties from sales of the Test of Narrative language, which was used as a research tool in the study described herein.

Supplemental digital content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's Web site (www.topicsinlanguageorders.com).

Corresponding Author: *Sandra Laing Gillam, PhD, Language and Literacy Clinic, Utah State University, 2610 Old Main, Logan, UT 84321 (sandi.gillam@usu.edu).*

THE IMPORTANCE OF NARRATION

Students with language impairments, learning disabilities, and students learning English who are at risk for language difficulties (hereafter referred to as children with language learning difficulties, LLD) often experience difficulty accessing the language arts curriculum in the regular classroom. This is partly because their reduced proficiency in oral language interferes with the beneficial effects of typical classroom instructional strategies (August, Shanahan, & Escamilla, 2009; “RAND Report,” 2002; Scott & Windsor, 2000). Children with LLD are less likely to provide correct answers to literal or inferential questions about stories that have been read to them

DOI: 10.1097/TLD.0000000000000081

(Bishop & Adams, 1990; Gillam, Fargo, & Robertson, 2009; Wright & Newhoff, 2001). The stories they tell are often shorter with fewer story grammar elements and more grammatically incorrect utterances than stories produced by typically developing students (Fey, Catts, Proctor-Williams, Tomblin, & Zhang, 2004; McFadden & Gillam, 1996; Miller & Chapman, 2006; Newman & McGregor, 2006; Roth & Spekman, 1986). Children with LLD also tend to create stories that contain fewer complex sentences, less diverse vocabulary, and limited literate language features (Gillam & Johnston, 1992; Greenhalgh & Strong, 2001; Kaderavek & Sulzby, 2000; Scott & Windsor, 2000). Therefore, it makes academic sense to target narration in intervention with students with LLD.

The purpose of this article is to describe a narrative language intervention program, Supporting Knowledge in Language and Literacy (SKILL; Gillam, Gillam, & Laing, 2012). The SKILL program is based on the notion that the cognitive and linguistic structures that underlie narration are critical for achieving the following three outcomes: (1) improving the ability to recall key ideas and specific details from oral and written passages (text/discourse information), (2) increasing students' ability to create stories with cohesive and coherent complex structures (causal frameworks), and (3) improving the metacognitive skills necessary for integrating text/discourse information with existing linguistic and conceptual knowledge for use in recalling, paraphrasing, retelling, summarizing, composing, and learning new information in the narrative genre. Some of the evidence that supports the use of SKILL to achieve these outcomes is presented.

NARRATIVE DEVELOPMENT

Studies of language development have shown that basic narrative skills appear during the preschool years and are expounded and extended during the school-age years. For example, in a longitudinal study of narrative development, Berman (1988) found

that story-level structures (macrostructures) and sentence-level structures (microstructures) were only weakly established in stories told by preschoolers. Their storytelling performance was highly variable because they had yet to acquire the key cognitive skills that underlie the ability to organize a story causally. They also lacked the linguistic skills necessary to convey the causal and temporal relationships that are the key components of narration, such as ability to use complex grammatical forms and vocabulary. By early school age, however, most children had achieved the cognitive and linguistic foundations that enabled them to learn and use the basic macrostructure of stories. Even though the primary-grade children in Berman's (1988) studies often created stories that included a basic story episode (i.e., an initiating event, goal-directed actions, and a consequence of those actions), they had not yet developed the literate language structures necessary for understanding and creating complex narratives. It appeared to Berman that children had to develop the cognitive organizational strategies that support narrative macrostructure before they could understand and create stories that contained literate language elements. These longitudinal findings are consistent with the results of cross-sectional developmental research indicating the importance of acquiring a story schema (Johnson & Mandler, 1980; Stein & Glenn, 1979) or goal-based causal episodes (Stein & Glenn, 1979; Trabasso & Nickels, 1992).

These findings are consistent with discourse theory (Graesser & Bertus, 1998; Trabasso & van den Broek, 1985), suggesting that text comprehension depends on the ability to establish coherent, logical, and causal relationships among the events through the creation of a causal network. Access to the causal network is gained through the principle of "necessity and sufficiency." The "necessity and sufficiency" principle states that A is sufficient for B (in the current set of circumstances); that A occurs causally prior to B; and if A is present and events spring from the occurrence of A, then B will occur (Mackie, 1980). Consider the following

sentences: “The girls who were hiking saw the mountain lion coming toward them. The girls ran as quickly as they could down the trail. They escaped from the lion by jumping into their car and locking the doors.” “A” may be represented by the event “mountain lion coming toward them.” A series of events “springing from the occurrence of A” might include “the girls running and jumping into the car and locking the doors.” All of these events were causally prior to B and necessary and sufficient for B (girls escaped from lion) to occur.

The basic episode structure of story grammar (initiating events, attempts, consequences) has been shown to be useful for helping students identify an event (A or initiating event) that propels a character into taking goal-directed actions that are causally linked to each other and to A (Trabasso & van den Broek, 1985). That same structure is used to determine whether goals have been satisfied (B or consequence). Teaching students to identify and learn the components of story grammar using story maps or graphic organizers has a long history in reading comprehension literature for typically developing students (e.g., Reutzel, 1985).

There is much more to narrative proficiency than the ability to include more story grammar elements in a retelling. One critical skill that contributes to proficiency in oral and written discourse is the ability to create a stable representation of incoming conceptual and linguistic information (Duke, Pearson, Strachan, & Billman, 2011; Kintsch, 2013; Westby, 2004). Kintsch’s (2013) construction-integration model holds that comprehension is a process of construction or “recalling text” and integration or “learning from text.” This process involves the formation of superordinate concepts or “situation models” and the connection and integration of information contained both in discourse and in memory. Stated another way, comprehension requires that a student form an idea about what the passage is about (e.g., it’s about fishing), connect the key bits of information together (e.g., what is happening, why is it happening), and compare what he

or she is hearing or reading to what is already known to decide whether it makes sense (e.g., does this fit with what I know about fishing?).

To decide whether information is making sense, students must consistently integrate what they are hearing or reading with what they already know. This is called comprehension monitoring, or when referring to written text, self-regulated reading (Hacker, 1998; Westby, 2004). Comprehension monitoring requires students to hold information in memory while evaluating whether it is consistent with what is already known, or with some “gold standard” against which comparisons may be made. In the case of story grammar, students must evaluate whether stories they read, listen to, or construct contain certain components (story elements), as well as content and structures (grammar, vocabulary, syntax), and are coherent and aesthetically pleasing (Colozzo, Gillam, Wood, Schnell, & Johnston, 2011).

NARRATIVE INTERVENTION (SKILL)

SKILL is a discourse-level intervention program designed to improve narrative proficiency in support of listening and reading comprehension and composition. It has been studied in groups of three or four students with specific language impairment (SLI) or students who are learning English as a second language and also has been investigated in a classroom context (Gillam, Olszewski, Fargo, & Gillam, 2014) and when provided individually to students with SLI (Gillam & Gillam, 2014) and autism spectrum disorder (ASD; Gillam, Hartzheim, Studenka, Simonsmeier, & Gillam, 2015).

SKILL is a manualized program, which is divided into three sections (Phase I, Phase II, and Phase III), as illustrated in Figure 1. The program is consistent with the Common Core State Standards for Reading (CCSS; National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). The CCSS recommend that primary-grade educators explicitly “teach students to identify and use the text’s organizational

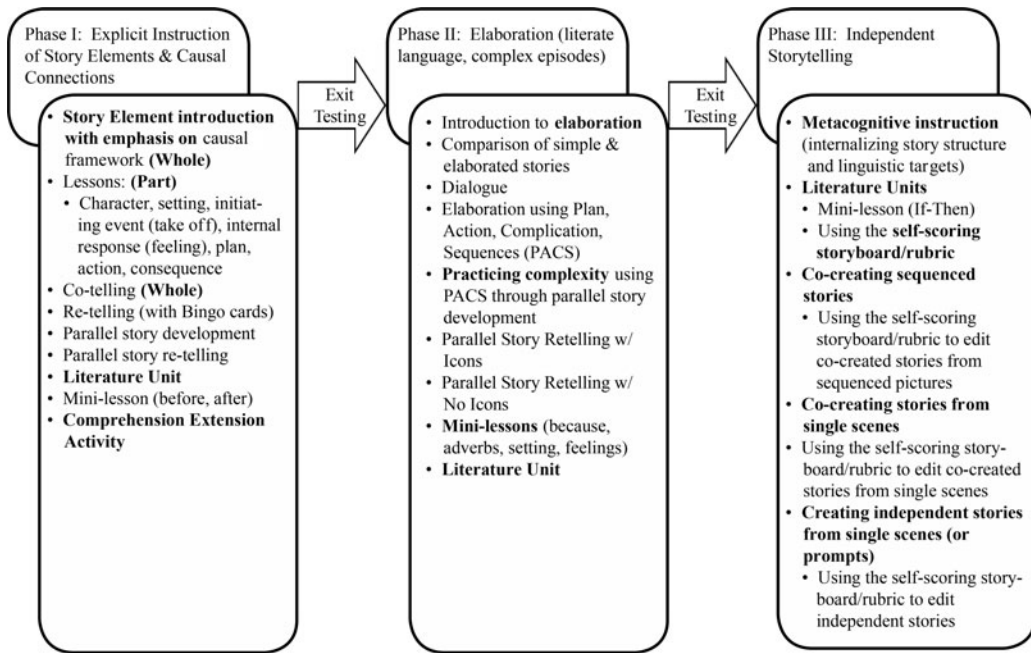


Figure 1. Outline of SKILL program. Copyright 2015 by S. Gillam and R. Gillam. Used with permission.

structure to comprehend, learn, and remember content” (Shanahan et al., 2010, p. 17, Recommendation 2). As early as first grade, students are expected to be able to retell stories including key details and to demonstrate their understanding of the central messages or lessons contained therein (CCSS.ELA-Literacy.RL.1.2; CCSS, 2010). By second grade, students are required to describe how characters respond to the events and challenges they face, which requires knowledge of not only isolated story elements (character, setting, initiating events) but also the causal relationships between the goals and motivations of characters and the subsequent actions that they take (CCSS.ELA-Literacy.RL.2.3).

Instruction in story grammar is a widespread practice among regular and special education teachers, as well as speech-language pathologists. However, there are few if any programs that focus on the development of the complex cognitive and linguistic skills that underlie narration, plus training in the metacognitive skills necessary to internalize an understanding of narrative and to generalize that understanding

to literacy instruction. Similar to other approaches to improving narrative proficiency, SKILL begins with lessons on basic story grammar elements. However, SKILL is unique in its focus in Phase II on the development of the cognitive and linguistic skills that underlie story complexity and in Phase III on its emphasis on fostering metacognitive skills to improve comprehension monitoring, which is an important problem for children with LLD (Gillam, Fargo, Gillam, & Cruce, 2013; Oakhill, Hartt, & Samols, 2005).

Figure 1 illustrates and summarizes the three phases of instruction contained in the SKILL program (Phases I, II, and III). The purpose of Phase I, “Teaching story elements and causal connections,” is to teach students the story grammar elements that have been shown to contribute most to comprehension and recall of narrative information (high to low; setting, consequence, attempt, initiating event, reaction, internal response; Mandler & Johnson, 1977), which also are identified in the CCSS. Lessons that target aspects of character development are also included, as they have been identified as key skills in

several areas on the CCSS from first through fourth grades. These objectives state that students must be able to describe characters, settings, and major events in stories, using key details (CCSS.ELA-Literacy.RL.1.2); to acknowledge differences in points of view of characters (CCSS.ELA-Literacy.RL.2.5); to describe character traits, motivations, and feelings (CCSS.ELA-Literacy.RL.3.3); and to describe character's "thoughts, words, and actions" (CCSS.ELA-Literacy.RL.4.3).

The story grammar elements are introduced in the context of a wordless picture book. They then become the focus of individual lessons. The first lesson involves teaching students about characters in stories. During the lesson, the clinician introduces an icon that represents the story grammar element being taught. The element is defined and discussed in the context of the wordless picture book, after which students are asked to generate their own characters using their world knowledge and experiences with guidance from the clinician. All of the story grammar elements are targeted in this fashion with emphasis first on the "text," represented by the information contained in the wordless picture book (characters, setting, attempt), followed by a discussion designed to encourage comprehension monitoring. In these discussions, students are encouraged to access their world knowledge (e.g., Why would someone run from a bear?) and use it to make sense of the information contained in the story to which they are listening. Throughout each lesson in Phase I, the clinician is encouraged to highlight the story grammar elements (e.g., action, internal response), as well as the causal connections that exist between them (e.g., He ran *because* he was afraid the bear would eat him; She was afraid *because* she thought the dog would bite her).

After the individual lessons, students are asked to retell the wordless stories with and without cognitive supports (including verbal supports, icons, graphic organizers, pictures). Subsequent lessons engage students in activities designed to generate (parallel story developing), retell, and evaluate (monitor and

edit) their own stories using the same cognitive supports. Early parallel stories may require heavy scaffolding by the clinician as students learn to create their own characters and settings and think of their own goal-motivated series of events and actions. Pictographic planning (Ukrainetz, 1998) is used as a cognitive support during this process. Pictographic planning involves asking children to draft their stories by drawing stick pictures and then using them for retelling. In SKILL, these pictographic plans are drafted onto a graphic organizer, called a storyboard, that contains all of the story grammar elements in sequential order and serves as a graphic organizer and memory aid.

At the end of Phase I, students take part in literature-based language activities by using a trade book that contains the story elements that have been taught using the wordless books (see Gillam, Gillam, & Reece, 2012). Activities for students during the literature unit include vocabulary development, story retelling (with and without support from pictures, icons, and graphic organizers), answering comprehension questions (factual and inferential), and parallel story development and retelling. In the parallel story development lessons, students are encouraged to create their own stories using the literature book as a framework.

Less advanced students may create parallel stories that are very similar to the book, changing the characters from penguins to snakes or changing the events from a dance party to a bowling party. More advanced students may create parallel stories that differ from the original literature book in many ways, incorporating new characters with new goals and motivations.

One important set of lessons contained in Phase I involves teaching comprehension and use of the concepts and linguistic markers for "before" and "after." These lessons are included because these terms are critical for establishing temporal relationships among events and they are known to be difficult for students with LLD (Greenhalgh & Strong, 2001). The final lesson in Phase I requires that

students listen to a story and answer factual and inferential comprehension questions after listening to a story without iconic or graphic organizer supports.

After students have participated in the 18 lessons in Phase I, they are given an *exit test* to determine whether or not they are ready to begin Phase II. To move to Phase II, children must demonstrate proficiency in (1) identifying and giving examples or definitions for all of the story grammar elements, (2) developing their own story using all of the story grammar elements (with assistance), and (3) answering comprehension questions about the story grammar elements after hearing a new story read to them without accompanying pictures. Children who do not meet these criteria continue in Phase I using additional lesson plans provided in the manual that are designed to provide extra practice relative to each of these three overarching skills.

In Phase II, there are 16 lessons that target specific linguistic structures, concepts, and vocabulary necessary for creating elaborate, cohesive, and complex stories. As in Phase I, these lessons center on a wordless picture book. The focus of this phase is to teach students the importance of elaboration and making their stories interesting, coherent, and complete. Several lessons target coordinated and subordinated clauses, metacognitive and metalinguistic verbs, causal language (e.g., with *because, so*), adverbs, and the use of elaborated noun phrases. These lessons were designed to emphasize the importance of identifying and making connections between story grammar elements, as well as identifying and using mental state words (e.g., *thought, decided*) and causal language (e.g., *because, so*) in stories. Children are encouraged to create stories that contain words such as *because* and *so* to explain *why* a character feels a certain way, or *why* she planned to take certain actions. Similarly, students are taught to listen for these words in stories they hear or read to help them remember the important parts for recall and answering questions.

In Phase II, children are introduced to the concept of dialogue. Dialogue as a means for

characters to communicate with each other within the context of a story is taught first within the context of a wordless picture book. Metalinguistic verbs used by characters in the wordless book are highlighted and discussed. These discussions are followed by lessons designed to help students think about how they might use dialogue in their lives and in the stories they create. In addition, Phase II contains a series of lessons to teach students to include multiple events in their stories, making them more complex. This is accomplished by teaching students to include a “complicating event” that has the potential to prevent a character from attaining his goal. When a complicating event occurs, the character must *plan again* and take new *actions* to get “back on track.” For example, consider the events in following story:

The girl lost her dog [initiating event]. She was sad because she loved him [internal response]. She decided to look for him [plan]. She thought she'd start looking in the back yard, but on the way outside she tripped and fell down the stairs [complication]. She could not stand on her foot because her ankle was sprained [complication]. She really wanted to find her dog, so she decided to look around to see if there was anything she could use to walk [new plan]. She saw a broom and grabbed it. She used the broom to help her walk to find her dog [new action].

As illustrated in this example, the introduction of a complication significantly lengthened the story and required new plans and actions to get the story back on track with the initial initiating event. A more complex storyboard can be used for these lessons that allows for the addition of up to three new plans and actions by the main character.

At the end of Phase II, students take part in the same kinds of literature-based language activities that they engaged in during Phase I but with a more complex literature book. There are also lessons specifically targeting the use of words to describe the feelings of characters in stories and the use of causal language, adverbs, setting words, and dialogue.

Phase II exit testing is conducted to determine whether students demonstrate adequate

proficiency creating stories that contain clear causal referents between the story elements and that they are using sufficiently complex language (two or more feeling words plus one or more mental or linguistic verbs, one or more adverbs, and one or more elaborated noun phrases). In addition, children must be able to answer comprehension questions and recall story details without a picture prompt. As in Phase I, additional materials, lessons, and practice are available for allowing children more practice to support movement to the next phase of instruction.

The last series of lessons, Phase III, was designed to foster the development of the metacognitive skills students need to become independent storytellers and story editors. For example, students learn to use an editing rubric (see Supplemental Digital Content A, available at: <http://links.lww.com/TLD/A48>) to evaluate whether the stories they are reading or creating contain all of the macrostructure and microstructure elements they have been taught during Phases I and II. There are nine lessons in Phase III, the first series of which follows the same procedures for the literature-based language units presented at the end of Phases I and II. However, a more complex trade book containing multiple, embedded episodes and more complex concepts, vocabulary, and syntax is used. After the literature unit, children use a self-editing rubric to critique the book for its use of story elements and literate language features. Subsequent lessons engage children in the process of generating, telling, editing, and revising their spontaneously generated stories from sequenced pictures and single-scene elicitation prompts with and without verbal and visual supports. In this phase, children also participate in lessons that allow them to experience and discuss various cause-effect relationships signaled by conditional clauses containing the adverbs “*if-then*.” The linguistic markers are taught using the content of the literature book (e.g., *If* the children act naughty, *then* Miss Nelson may go missing) and then extended to real-life situations (e.g.,

If you found a wallet, *then* you might call the police).

EVIDENCE FOR THE EFFECTIVENESS OF THE SKILL APPROACH: QUANTITATIVE DATA

Several studies contributed to the development of SKILL (summarized in Table 1). Other studies were conducted to evaluate and further refine the program (summarized in Table 2). As can be seen in these tables, SKILL is associated with consistently moderate to large effect sizes for improving narrative proficiency. They range from 0.66 to 2.54 for students with LLD aged 5–11 years. Effect sizes range from 1.63 to 5.11 for students with ASD aged 8–12 years. The intervention is associated with moderate to large effect sizes for improving vocabulary for students aged 7–8 years at high risk ($d = 0.66$) and low risk (2.28) for language impairment (Gillam et al., 2014).

Preliminary data also show that SKILL is associated with increases in the syntactic complexity of narratives students retell and generate independently (Anderson, Israelsen, Nielsen, Crotty, & Gillam, 2015; Sanford, Pearson, Summers, Crotty, & Gillam, 2015). Table 3 shows the data for spontaneously generated stories and retells averaged across intervention for five students with a diagnosis of ASD, ranging in age from 8 to 12 years, who participated in the SKILL program (a description of which is shown in Table 2; Gillam et al., 2015). As shown in Table 3, many of the students demonstrated notable gains in their use of complex sentences over the course of intervention. These data suggest that, for some students, a focus on making their stories more complex in terms of the story elements they include is associated with a simultaneous increase in their use of complex sentences with little if any direct focus in intervention. This phenomenon is illustrated well in the next section, as the progress of one young man with ASD is followed over the course of his participation in the SKILL program.

Table 1. Selected preliminary studies leading to SKILL

Study	Service Delivery	Duration/Intensity	Cohen's <i>d</i>	Targets	Outcome Measure
Gillam, Gillam, Petersen, & Bingham, 2008 (<i>n</i> = 216)	Individual; children with language impairment	20 min of narration (within 100 min overall), 4 weeks	0.41 (moderate)	Multiple language targets (morphology, syntax, semantics, phonological awareness); implicit training for SGEs	TNLAI composite score
Gillam et al., 2012 (<i>n</i> = 24)	Small group; children with language impairment	50 min, 6 weeks, groups of three	0.43 (moderate)	Multiple language targets (morphology, syntax, semantics, phonological awareness); implicit training for SGEs; incorporation of oral and written language	TNLAI composite score
Gillam et al., 2008 (<i>n</i> = 16)	Small group; children with language impairment	90 min, 4 weeks; groups of three	1.41 (large)	Explicit training for SGEs; wordless and literature books; no specific training in microstructure	TNLAI composite score
Gillam et al., 2014 (<i>n</i> = 43)	Whole classroom; at risk	30 min, two times per week, 6 weeks; one experimental and one comparison class	0.33 (moderately large; Lipsey et al., 2012)	Explicit training for SGEs; explicit and implicit instructions in microstructure using wordless books and literature; only oral instruction	TNLAI composite score

Note. SKILL = Supporting Knowledge in Language and Literacy; TNLAI = Test of Narrative Language Abilities Index, a composite score including narrative comprehension and production. Total score (possible 39) contains macrostructure (character, setting, initiating event, internal response, plan, attempt, consequence) and microstructure (coordinating and subordinating conjunctions, adverbs, metacognitive and metalinguistic verbs, and elaborated noun phrases); SGE = Story grammar element. Copyright 2015 by S. Gillam and R. Gillam. Used with permission.

Table 2. Selected studies evaluating the SKILL program

Study	Service Delivery	Duration/Intensity	Cohen's <i>d</i>	Targets	Outcome Measure
Gillam et al., 2015 (<i>n</i> = 5)	Individual; children with autism spectrum disorders	P1 (45 min, 23 sessions, 11 weeks) P2 (45 min, 21 sessions, 11 weeks) P3 (45 min, 19 sessions, 10 weeks) P4 (45 min, 33 sessions, 17 weeks) P5 (45 min, 27 sessions, 14 weeks)	MISL P1 SMD _{all} = 2.31 (large) P2 SMD _{all} = 1.77 (large) P3 SMD _{all} = 1.63 (large) P4 SMD _{all} = 2.46 (large) P5 SMD _{all} = 5.11 (large)	Explicit training for SGEs; explicit and implicit instructions in microstructure using wordless books and literature; only oral instruction	MISL (total score = 39); metacognitive and metalinguistic verbs scored separately
Gillam, Gillam, & Hancock, 2016 (<i>n</i> = 20)	Small group; Children with Language Impairment	35-40 min, 6 weeks; groups of three	1.45 (large)	Explicit training for SGEs; explicit and implicit instructions in microstructure using wordless books and literature; only oral instruction	TNLAI composite score
Gillam, Gillam, Squires, Snyder, & Slocum, 2016 (<i>n</i> = 20)	Individual; children with language impairment	P1 (35 min, 24 sessions, 8 weeks) P2 (35 min, 18 sessions, 7 weeks) P3 (40 min, 22 sessions, 8 weeks) P4 (50 min, 13 sessions, 6 weeks)	P1 SMD _{all} = 2.54 (large) P2 SMD _{all} = 1.89 (large) P3 SMD _{all} = 0.66 (moderate) P4 SMD _{all} = 1.35 (large)	Explicit training for SGEs; explicit and implicit instructions in microstructure using wordless books and literature; only oral instruction	MISL (total score = 36); metacognitive and metalinguistic verbs scored as one category

Note. SKILL = Supporting Knowledge in Language and Literacy; TNLAI = Test of Narrative Language Abilities Index, a composite score, including narrative comprehension and production. Total score (possible 39) contains macrostructure (character, setting, initiating event, internal response, plan, attempt, consequence) and microstructure (coordinating and subordinating conjunctions, adverbs, metacognitive and metalinguistic verbs, and elaborated noun phrases). MISL = Monitoring Indicators of Scholarly Language; SGE = story grammar element; SMD_{all} = measure of effect size, calculated from the mean performance data during baseline and intervention divided by the standard deviation of the baseline mean. Copyright 2015 by S. Gillam and R. Gillam. Used with permission.

Table 3. Average percentage of utterances that were syntactically complex in spontaneously generated stories and story retells collected at baseline and during the intervention period for five students diagnosed with autism spectrum disorder

Participant	Baseline		Intervention	
	Spontaneously Generated	Retells	Spontaneously Generated	Retells
1	17%	29%	34% ^a	35% ^a
2	25%	0%	16%	33% ^a
3	21%	27%	27% ^a	24%
4	16%	24%	23% ^a	33% ^a
5	0%	3%	6% ^a	8% ^a

Note. Data represent percentage of utterances in stories that contained two or more main verbs. Copyright 2015 by S. Gillam and R. Gillam. Used with permission.

^aA 5% or greater increase from baseline.

EVIDENCE FOR THE EFFECTIVENESS OF THE SKILL APPROACH: QUALITATIVE DATA

In this section, we summarize the progress that one child, Jon, made during intervention. Jon was 10 years old and had been diagnosed with ASD. His overall language scores were very low. His general language proficiency, as measured using the Comprehensive Evaluation of Language Fundamentals-5 (Semel, Wiig, & Secord, 2005), was 62. He obtained a standard score of 55 on the Test of Narrative Language (TNL; Gillam & Pearson, 2004). Jon's nonverbal intelligence score, as measured using the Universal Nonverbal Intelligence Test (Bracken & McCallum, 1998), was 78 (low average).

Jon attended four baseline sessions before he participated in the SKILL program. During this time, he was asked to retell four stories (without picture prompts) and to generate his own four stories (using a single-picture prompt). He was not given visual prompts, icons, or graphic organizers during the probe sessions.

Jon's stories were scored for macrostructure (character, setting, initiating event, internal response, plan, attempt, consequence; total possible score = 21), microstructure (coordinated and subordinated conjunctions, ad-

verb, mental and linguistic verbs, elaborated noun phrases; total possible score = 18), and perspective taking ability (internal response, plan, mental and linguistic verbs; total possible score = 12), using a progress monitoring tool (see Supplemental Digital Content B, available at: <http://links.lww.com/TLD/A49>) called Monitoring Indicators of Scholarly Language (MISL). Jon's average MISL score during baseline for the spontaneously generated stories was 3.0 ($SD = 1.41$) and ranged from 1 to 4. His average MISL score during baseline for the story retells was 6.0 ($SD = 4.24$) and ranged from 2 to 11. His average score on the Perspective Taking Index (PTI) was 1.75 ($SD = 1.26$) for spontaneously generated stories and 1.25 ($SD = 1.5$) for retells.

Jon participated in thirty-three 45-min individual intervention sessions using the SKILL program. He was asked to create a story from a single-scene prompt after 17 of the weekly sessions and to retell a story after 16 of the sessions.

Jon's average MISL score during the intervention period for the spontaneously generated stories was 16.56 ($SD = 9.16$), representing more than a 13-point increase from baseline. A total of 95% of the MISL scores for his spontaneously generated stories during intervention were above his highest baseline score ($HBS = 4$). His average PTI score

for spontaneously generated stories was 3.19 ($SD = 2.69$). Fifty percent of his PTI scores elicited through spontaneously generated stories were above his baseline score ($HBS = 3$).

Jon was asked to retell stories after 16 of the weekly sessions. His average score for the retells was 14.38 ($SD = 6.67$), representing a 3-point increase from baseline. A total of 63% of scores were above his baseline score ($HBS = 11$). His average PTI score for retells during intervention was 1.25 ($SD = 21.5$), representing a 50% increase from baseline ($HBS = 3$). After instruction, his Narrative Language Ability Index score on the TNL increased to 76, which represented a 21-point improvement in his standard score.

To illustrate some of changes that occurred in his narrative proficiency over the course of intervention, a series of clips of this student creating his own stories is shown in the Supplemental Content C (available at: <http://links.lww.com/TLD/A50>). Each clip is described and analyzed in the following section. The first clip is a sample obtained during a baseline session. During this session, he was asked to create his own story from a picture depicting a beach scene. The story was scored using the MISL rubric. He created the following story about the picture: "There's a lot of kids and parents at the beach. They're trying to find sea shells, and they're getting wet." This story earned a score of 1 for character, 1 for setting, and 1 for action (trying to find seashells). There is one coordinating conjunction (*and*) and an elaborated noun phrase (*the beach*) in the story. During Phase I, the goal was to teach him all of the story elements (character, setting, initiating event, internal response, plan, attempts, consequence) and illustrate how they are used in stories (story modeling using icons, repetition, and graphic organizers) and the story elements are connected (using causal language such as *because*, *and so*) through causal reasoning.

In the next clip, after three intervention sessions, Jon created a story surrounding a picture of a girl making a face and holding a cookie. The story is as follows: "And so this

girl is eating a cookie, and she doesn't think that she'll like it. So she decided to not eat it. She was kinda nervous, that's the feeling, and the character is a person." As illustrated in this clip, Jon overtly marked aspects of story grammar (character, internal response), indicating that he was making a metacognitive effort to include them in his self-generated story. He also incorporated a mental state verb to describe what the character was thinking (doesn't think she'll like it, she decided to not eat it) and used a different one to indicate a plan (decided not to eat it). In addition, Jon added information about how the character felt about the situation (having to eat a sour cookie), which is considered an internal response to the prospect of having to eat a sour cookie (feeling nervous). In the sample, there are two coordinating conjunctions (*and*, *so*) and use of the word "nervous" to describe how the character felt about having to eat a cookie that might not taste good. It should be noted that there was no time during intervention that he was engaged by the clinician in a discussion about how cookies might taste bad.

Before the next clip, after about 13 sessions, Jon had completed Phase I and had begun lessons taught during Phase II. He was given a picture of some bicyclists and asked to tell a story. His story was as follows:

Once upon a time there were all of these men. They were on a bike race in Cache Vilosa. So they decided to get on their bikes and wait for the signal to drop down for them to go. So that's what they did. So they got on their bikes and started racing down the road track. And that's my very best story.

This story included an initiating event (they were on a bike race), a plan (they decided to get on their bikes and wait for signal), and an action (that's what they did, they got on their bikes and started racing). There was novel setting (there is no such place as Cache Vilosa), and his use of coordinating (*so*) conjunctions to mark causality was consistent. He was observed to use terms (signal), as well as phrases (Once upon a time), and to describe events (bike races, signal dropping down to indicate

the start of the race) that had never been discussed during intervention; nor had they been conveyed to us as topics of interest by him or his mother.

The clip seen next was obtained after Session 19 when he was well into lessons taught during Phase II. Jon was shown a picture of a beach scene and created the following story:

Once upon a time there was a boy named Tasha. And he was trying to sail in this ocean until a big wave came and almost made him drown. So he decided to try to get out. But he couldn't. He was about to drown. But Tasha made his way out the wave. And the waves calmed down. So in the end he felt kinda relieved because he didn't expect to drown.

This story illustrates how he was now using "once upon a time" fairly consistently, even though he's never been taught to do so during the intervention program and to give characters proper names. He was attempting to include all of the story elements including a complicating action (decided to try and get out, but he couldn't. He was about to drown). It is clear that he is using words that had not been taught (drown, calmed down, relieved) and that he was using more complex language (a big wave; he felt kinda relieved because he didn't expect to drown) as the intervention progressed.

After Session 23, Jon was shown a picture of a helicopter and created this story:

Once upon a time there was a boy named Rylan, and he was in a helicopter in the afternoon time in California. So he decided to find his best blue helicopter and got in it and flew away into the sky. So he decided to jump in a helicopter and fly until lunchtime. So that's what he did. He flew in the helicopter until it was lunchtime. But uh oh his helicopter fuel gauge said that his gas was about to get dead. So he decided to land at a helicopter gas station. So that's what he did. He landed at a helicopter gas station. He got gas, got back in his helicopter, went to his house and then he had biscuits with gravy for lunch. In the end he felt pleased that he was finally full.

Jon had participated in all of the lessons taught during Phases II and most of those for Phase III. In these lessons, he was taught to

use dialogue, to remember to use all of the story elements in his stories including "complicating action" and to "plan again" when goals were interrupted (something got in the way of characters' goal-directed actions). In addition, Phase III incorporates extensive experiences to practice monitoring whether existing literature or self-generated stories contain all of the "elements" and "language structures" that good stories need.

This story and subsequent ones demonstrate that Jon had learned to include proper names for characters and settings, and all of the critical story elements (initiating event, internal response, plan, attempt, consequence), as well as the important mental state and causal language needed to form a coherent narrative. One compelling observation that was made about his progression over time was his use of story grammar as an organizing framework to access concepts and language that he already knew or to create novelty in stories (names for characters or settings that do not exist; Tasha, Rylan, Cache Vilosa), to use common story starters that he had clearly heard but did not use (Once upon a time), and to use existing vocabulary in authentic contexts (nervous, signal, relieved). He also quickly learned new terms including those used to mark perspective (decided, thought, wanted) by attaching the concept of "planning" to an icon in a sequentially organized graphic organizer.

SUMMARY

SKILL (Gillam et al., 2012) is a narrative intervention program designed specifically for children with language impairment. The program incorporates lessons designed to (1) improve the cognitive and linguistic skills necessary to support the recall of key ideas and specific details from oral and written passages (text/discourse information), (2) increase students' proficiency in creating stories with coherent and cohesive story structures within a causal framework, and (3) improve the metacognitive skills necessary for integrating text/discourse information with

existing linguistic and conceptual knowledge for use in recalling, paraphrasing, retelling, summarizing, composing, and learning new information in the narrative genre.

These objectives are accomplished through scaffolded teaching of story structure with a heavy emphasis on assisting students in identifying and establishing causal networks. The intervention provides children with many opportunities to use critical concepts and linguistic structures in retelling, co-creating, and

self-creating stories. Our research on SKILL demonstrates consistent increases in story structure in self-generated narratives with accompanying increases in syntactic, suggesting that a focus on underlying cognitive and linguistic aspects of narration leads to increases in the complexity of children's stories through elaborate use of story grammar. In addition, children's use of complex syntax may increase spontaneously, with minimal direct instruction.

REFERENCES

- Anderson, T., Israelsen, M., Nielsen, A., Crotty, B., & Gillam, S. (2015, April). *The relationship between narrative proficiency and syntactic complexity of story retells elicited from children with autism spectrum disorder (ASD)*. Poster presented at the National Conference on Undergraduate Research (NCUR), Cheney, WA.
- August, D., Shanahan, T., & Escamilla, K. (2009). *English language learners—Developing literacy in second language learners—Report of the National Literacy Panel on Language-Minority Youth*. *Journal of Literacy Research, 41*, 432–452.
- Berman, R. (1988). On the ability to relate events in narrative. *Discourse Processes, 11*, 469–497.
- Bishop, D. V. M., & Adams, C. (1990). A prospective study of the relationship between specific language impairment, phonological disorders and reading retardation. *Journal of Child Psychology and Psychiatry, 31*, 1027–1050.
- Bracken, B. A., & McCallum, R. S. (1998). *Universal Nonverbal Intelligence Test*. Itasca, IL: Riverside Publishing.
- Clarke, P., Snowling, M., Truelove, E., & Hulme, C. (2010). Ameliorating children's reading-comprehension difficulties: A randomized controlled trial. *Psychological Science, 21*(8), 1106–1116. doi:10.1177/0956797610375449
- Colozzo, P., Gillam, R., Wood, M., Schnell, R., & Johnston, J. (2011). Content and form in the narratives of children with specific language impairment. *Journal of Speech, Language, and Hearing Research, 54*, 1609–1627.
- Dickson, S. V., Simmons, D. C., & Kameenui, E. J. (1998). Text organization: Instructional and curricular basics and implications. In D. C. Simmons & E. J. Kameenui (Eds.), *What reading research tells us about children with diverse learning needs: Basics and basics* (pp. 239–278). Mahwah, NJ: Lawrence Erlbaum Associates.
- Duke, N. K., Pearson, P. D., Strachan, S. L., & Billman, A. K. (2011). Essential elements of fostering and teaching reading comprehension. In S. J. Samuels, & A. E. Farstrup (Eds.), *What research has to say about reading instruction* (4th ed., pp. 51–93). Newark, DE: International Reading Association.
- Fey, M. E., Catts, H. W., Proctor-Williams, K., Tomblin, J. B., & Zhang, X. (2004). Oral and written story composition skills of children with language impairment. *Journal of Speech, Language, and Hearing Research, 47*, 1301–1318.
- Gillam, R., Gillam, S., & Hancock. (2016). *Small-scale randomized controlled trial of a narrative language program*. Manuscript in preparation.
- Gillam, R. B., & Carlile, R. M. (1997). Oral reading and story retelling of students with specific language impairment. *Language, Speech, and Hearing Services in Schools, 28*, 30–42.
- Gillam, R. B., & Johnston, J. R. (1992). Spoken and written language relationships in language/learning-impaired and normally achieving school-age children. *Journal of Speech and Hearing Research, 35*(6), 1303–1315. doi:10.1044/jshr.3506.1303
- Gillam, R. B., & Pearson, N. A. (2004). *Test of Narrative Language*. Austin, TX: Pro-Ed.
- Gillam, S., Fargo, J., Gillam, R., & Cruce, C. (2013). A comparison of two directed monitoring conditions for improving comprehension. *International Journal of Speech and Language Pathology and Audiology, 1*, 52–62.
- Gillam, S., Fargo, J., & Robertson, K. (2009). Comprehension of expository text: Insights gained from think-aloud data. *American Journal of Speech Language Pathology, 18*, 82–94.
- Gillam, S., & Gillam, R. (2014). Improving clinical services: Be aware of fuzzy connections between principles and strategies. *Language, Speech, and Hearing Services in Schools, 45*, 137–144.
- Gillam, S., Gillam, R., & Laing, C. (2012). *Supporting Knowledge in Language and Literacy (SKILL)* (Curriculum guide to teaching narratives with DVD, manual, and progress monitoring tools). Logan, UT: Utah State University, Commercial Enterprises.

- Gillam, S., Gillam, R., Petersen, D., & Bingham, C. (2008). *Narrative language intervention program: Promoting oral language development*. Technical session presented at the Annual Convention of the American Speech-Language and Hearing Association, Chicago, IL.
- Gillam, S., Gillam, R., & Reece, K. (2012). Language outcomes of contextualized and decontextualized language intervention: Results of an early efficacy study. *Language, Speech, and Hearing Services in Schools, 43*(3), 276–291. doi:10.1044/0161-1461(2011/11-0022)
- Gillam, S., Gillam, R., Squires, O., Snyder, S., & Slocum, T. (2016). *Narrative intervention for children with specific language impairment*. Manuscript in preparation.
- Gillam, S., Hartzheim, D., Studenka, B., Simonsmeier, V., & Gillam, R. (2015). Narrative intervention for children with autism spectrum disorder (ASD). *Journal of Speech, Language, and Hearing Research, 58*(3), 920–933.
- Gillam, S., Olszewski, A., Fargo, J., & Gillam, R. (2014). Classroom-based narrative and vocabulary instruction: Results of an early-stage, nonrandomized comparison study. *Language, Speech, and Hearing Services in Schools, 45*, 204–219.
- Graesser, A., & Bertus, E. (1998). The construction of causal inferences while reading expository texts on science and technology. *Scientific Studies of Reading, 2*, 247–269.
- Greenhalgh, K., & Strong, C. (2001). Literate language features in spoken narratives of children with typical language and children with language impairments. *Language, Speech, and Hearing Services in Schools, 32*, 114–125.
- Hacker, D. J. (1998). Self-regulated comprehension during normal reading. In D. J. Hacker, J. Dunlosky, & A. C. Graesser (Eds.), *Metacognition in educational theory and practice* (pp. 165–191). Mahwah, NJ: LEA.
- Johnson, N., & Mandler, J. (1980). A tale of two structures: Underlying and surface forms in stories. *Poetics, 9*, 51–86.
- Kaderavek, J. N., & Sulzby, E. (2000). Narrative production by children with and without specific language impairment: Oral narratives and emergent readings. *Journal of Speech, Language, and Hearing Research, 43*(1), 34–49. doi: 10.1044/jslhr.4301.34.
- Kintsch, W. (2013). Revisiting the construction-integration model of text comprehension and its implications for instruction. In D. E. Alvermann, N. J. Unrau, & R. B. Ruddell (Eds.), *Theoretical models and processes of reading* (6th ed., pp. 807–839). Newark, DE: International Reading Association.
- Lipsey, M. W., Puzio, K., Yun, C., Hebert, M., Steinkamp, K., Cole, M., Busick, M. (2012). *Translating the statistical representation of the effects of education interventions into more readily interpretable forms (NCSE 2013-3000)*. Washington, DC: National Center for Special Education Research, Institute of Education Sciences, U.S. Department of Education. Retrieved from [http://ies.ed.gov/ncser/Lonigan & Whitehurst](http://ies.ed.gov/ncser/Lonigan&Whitehurst), 1998.
- Mackie, J. (1980). *The cement of the universe: A study of causation*. Oxford, England: Clarendon Press.
- Mandler, J., & Johnson, N. (1977). Remembrance of things parsed: Story structure and recall. *Cognitive Psychology, 9*, 111–151.
- McFadden, T. U., & Gillam, R. B. (1996). An examination of the quality of narratives produced by children with language disorders. *Language, Speech, and Hearing Services in Schools, 27*, 48–56.
- Miller, J., & Chapman, R. (2006). Systematic analysis of language transcripts [Computer software]. Madison, WI: University of Wisconsin—Madison, Waisman Center, Language Analysis Laboratory.
- Nation, K., Cocksey, J., Taylor, J., & Bishop, D. (2010). A longitudinal investigation of early reading and language skills in children with poor reading comprehension. *Journal of Child Psychology and Psychiatry, 51*, 1031–1039.
- National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). *Common core State Standards*. Washington, DC: Author.
- Newman, R. M., & McGregor, K. K. (2006). Teachers and laypersons discern quality differences between narratives produced by children with or without SLI. *Journal of Speech, Language, and Hearing Research, 49*(5), 1022–1036. doi: 10.1044/1092-4388(2006/073).
- Oakhill, J., Hartt, J., & Samols, D. (2005). Levels of comprehension monitoring and working memory in good and poor comprehenders. *Reading and Writing, 18*, 657–686.
- Paquette, K., Fello, S., & Jalongo, M. (2007). The talking drawings strategy: Using primary children's illustrations and oral language to improve comprehension of expository text. *Early Childhood Education Journal, 35*(1), 65–73. doi:10.1007/s10643-007-0184-5
- RAND Report. (2002). Santa Monica, CA: RAND Reading Study Group.
- Reutzel, D. R. (1985). Story maps improve comprehension. *Reading Teacher, 38*, 400–404.
- Roth, F. P., & Spekman, N. J. (1986). Narrative discourse: Spontaneously generated stories of learning disabled and normally achieving students. *Journal of Speech and Hearing Disorders, 51*, 8–23.
- Sanford, M., Pearson, R., Summers, K., Crotty, B., & Gillam, S. (2015, February). *Syntactic complexity and narrative competence for children with autism spectrum disorder (ASD): Balancing complexity with content in spontaneously generated stories*. Poster presented at the National Conference on Undergraduate Research (NCUR), Cheney, WA.
- Scott, C., & Windsor, J. (2000). Performance measures in spoken and written narrative and expository discourse of school-age children with language learning

- disabilities. *Journal of Speech, Language, and Hearing Research*, 43, 324-339.
- Semel, E., Wiig, E., & Secord, W. (2005). *Clinical evaluation of language fundamentals*. San Antonio, TX: Psychological Corporation.
- Shanahan, T., Callison, K., Carriere, C., Duke, N., Pearson, P., Schatschneider, C., et al. (2010). *Improving reading comprehension in kindergarten through 3rd grade: A practice guide* (NCEE 2010-4038). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from whatworks.ed.gov/publications/practiceguides
- Stein, N. L., & Glenn, C. (1979). An analysis of story comprehension in elementary school children. In R. O. Freedle (Ed.), *New directions in discourse processing* (Vol. 2, pp. 53-120). Norwood, NJ: Ablex.
- Trabasso T., & Nickels M. (1992). The development of goal plans of action in the narration of a picture story. *Discourse Process*, 15, 249-275. doi: 10.1080/01638539209544812
- Trabasso, T., & van den Broek, P. (1985). Causal thinking and the representation of narrative events. *Journal of Memory and Language*, 24, 612-630.
- Ukrainetz, T. A. (1998). Stickwriting stories: A quick and easy narrative representation strategy. *Language, Speech, and Hearing Services in Schools*, 29, 197-206.
- Westby, C. (2004). A language perspective on executive functioning, metacognition and self-regulation in reading. In C. A. Stone, E. R. Silliman, B. J. Ehren, & K. Apel (Eds.), *Handbook of language and literacy: Development and disorders* (pp. 398-427). New York: Guilford Press.
- Wright, H., & Newhoff, M. (2001). Narration abilities of children with language-learning disabilities in response to oral and written stimuli. *American Journal of Speech-Language Pathology*, 10, 308-319.