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Comparison of two approaches to improving cognitive academic language proficiency for school-aged, English Language Learners: Two-group, pretest/posttest design

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Abstract

This preliminary study was designed to examine which of two interventions (standard practice or narrative based) was associated with better improvement in cognitive academic language proficiency, or literate language, for school-age children learning as a second language (English Language Learners; ELLs). We hypothesized that narrative-based intervention would yield better outcomes than the standard practice intervention because it provided children with contextual cues, redundancy, and predictability, which should promote learning and generalization.

We employed a pre/post test design and included 18 children (ELLs) who were at-risk for language and learning problems to test the hypothesis that narrative-based language intervention would yield better outcomes than a standard practice intervention. Children were randomly assigned to a standard practice intervention (n = 9, average age=112.89 months, SD=15.09 months) or narrative-based language intervention (n = 9, average age=106 months, SD=17.10 months). Children in both groups were seen for 30-45 minutes per day, 4 days per week for 6 weeks in groups of three or four. An ELL teacher administered both intervention programs. Outcomes were measured using the recalling sentences subtest of the Clinical Evaluation of Language Fundamentals-4 in English (CELF-4; Semel, Wiig, & Secord, 2003) and Spanish (CELF-4-Spanish Edition; Semel, Wiig, & Secord, 2006), a story retelling and analysis of stories produced using the Test of Narrative Language in English and Spanish before and after intervention.

Results suggested that both interventions were effective in increasing cognitive academic language proficiency.

One of the most compelling problems facing teachers in the United States is that many students come into their classrooms without the necessary pre-requisite knowledge and skills to read and comprehend the materials presented to them (Rand Reading Study Group, 2002). This is particularly true for children for whom English is their second language. The number of school-age children (ages 5–17) who speak a language other than English at home increased from 9 to 20% between the years 1979 and 2005 (National Center for Education Statistics, 2004). More than 75% of these children use Spanish as their primary language, totaling more than 2,900,000 students. Over 80% of schools during this time period were serving English Language Learners (ELLs) who spoke Spanish as their first language (National Clearinghouse for English Language Acquisition and Language Instruction Educational Programs, 2007). According to the Rand Reading Study Group "unacceptable gaps in reading performance persist between children in different demographic groups despite the efforts...to close those gaps". Because of the growing diversity of the U.S. population, these gaps will most likely widen even more (Rand Reading Study Group, 2002). It is important to conduct empirical studies to explore ways to reduce the gaps between mainstream and diverse populations in terms of their reading comprehension performance. The National Literacy Panel on Language-Minority Children and Youth reported that the nature of the relationship between English oral language proficiency and reading comprehension is one of the most crucial areas of concern for ELLs (August & Shanahan, 2006). These two areas are crucial in providing a successful and appropriate experience for children learning a second language in the school setting.

Basic Interpersonal Communication (BICS) and Cognitive Academic Language Proficiency
(CALP)

The development of oral language proficiency for bilingual children involves the

acquisition of both basic interpersonal communicative skills (BICS) and cognitive academic language proficiency (CALP; Cummins, 1980). BICS are the language skills that are needed to participate in every day conversations and enable children to interact appropriately in social situations. It is the day-to-day language needed to interact on the playground, in the lunchroom, on the school bus, at parties, playing sports, and talking on the telephone. Conversational oral language or BICS is contextualized and contains multiple cues including those from the environment (e.g., gestures, facial expressions, objects, prosody; Paul, 2001, p. 391). These types of interactions are less cognitively demanding than those that incorporate Cognitive Academic Language Proficiency (CALP). CALP refers to the highly abstract, decontextualized communication that takes place in the classroom, especially in the later elementary grades. It includes listening, speaking, reading, and writing about a subject area. CALP involves the "language of learning", which enables children to problem-solve, hypothesize, imagine, reason and project into situations with which they have no personal experience. This level of language learning is essential for students to succeed in school (www.everythingesl.net). In order for children to develop competent comprehension skills, they must master both BICS and CALP. Research has suggested that students may acquire BICS in 2-3 years but may take as long as 5-7 years to develop CALP that places them at the same level as their monolingual English speaking counterparts in the mainstream classroom.

The term "literate language" is defined as language that is used to "monitor and reflect on experience, and reason about, plan, and predict experiences" (Westby, 1985, p. 181). In this study, we use the terms cognitive academic language proficiency and literate language synonymously. The development of literate language, or CALP, contributes to the academic success of children (Greenhalgh & Strong, 2001) and is largely acquired through reading and

interactions surrounding print (Greenhalgh & Strong, 2001; Wallach & Butler, 1994, p. 6). Deficits in CALP may limit a child's ability to convey specific meanings (Paul, 1995), to reflect on information and to request clarification. Children with limited CALP may have difficulty discussing abstract ideas and in using specific academic vocabulary. CALP is often reflected in rich vocabulary use including the proficient use of conjunctions, elaborated noun phrases, mental and linguistic verbs, and adverbs (Paul, 2007, p. 501). These words create cohesiveness and elaboration within a story and help create an abstract model for the listener (Segal & Dunchan, 1997). Conjunctions include "and, but, so, after, before, when, next, while and until." These words are often used to connect thoughts or ideas. Elaborated noun phrases include one or more modifiers preceding the noun (e.g., the *two big* dogs). Mental and linguistic verbs denote cognitive (think, wish, know, forget) or linguistic (say, promise, report, exclaim) processes. Adverbs are words that reflect aspects of tone, attitude, and manner conveyed by stress or intonation (angrily, hotly, threateningly) (Paul, 2007, p. 501). Thus, CALP includes syntactic as well as semantic knowledge.

For students with lower English proficiency, knowledge of English vocabulary and syntax (August & Shanahan, 2006; Cunningham & Stanovich, 1997; Hazenberg & Hulstijn, 1996) may be intimately tied to their reading comprehension skills. Successful reading requires the ability to identify and understand the meanings of words (Biemiller, 2007) and how those words link together to form complex sentences.

Training Cognitive Academic Language in the Context of Narration

There are a number of approaches to teaching CALP to young ELL students. One is to use narrative or literature-based contexts. Stories provide a unique context in which to teach semantic and syntactic information. The use of contextual cues, redundancy, and predictability

has been shown to promote learning and generalization of various skills for children with language impairment and are inherent in narratives. Beal and Snow (1994) defined narration as opportunities to "talk about the past or future" and suggest that they serve as a natural and untrained way that children think and remember information. Knowledge of narration has been found to be an important predictor of reading comprehension in this population (August & Shanahan, 2006; Miller, Iglesias, Heilmann, Fabiano, Nockerts, & Francis, 2006) and may be an important context to target cognitive academic language for students learning English as a second language.

Recent studies have examined the effects of the use of narratives in the educational and cognitive development of language with children learning English as a second language. Biemiller and Boote (2006) utilized narrative contexts to teach specific academic vocabulary to young elementary children, 50% of whom were learning English as a second language (ELL). Findings revealed that repeated readings of stories containing target vocabulary resulted in a 12% gain for participants. Children were shown to increase their vocabulary knowledge by an additional 10% when teachers also added word explanations to the instruction process. Interestingly, children's level of word knowledge in English, measured at pre-test, was not related to their ability to learn the vocabulary words. This is an important finding because it suggests that the children who were ELL were able to benefit from instruction provided in English.

In a similar study, Neris, Jackson, and Goldstein (2010) recruited young ELLs to an intervention designed to teach vocabulary in storybook reading contexts. Children were assigned to two groups: children who demonstrated high Spanish and low English (HS-LE) proficiency and children who demonstrated low Spanish and low English (LS-LE) proficiency. Language

proficiency was assigned based on standard scores obtained from the Preschool Language

Assessment Scales – Spanish and English (Pre-LAS, 2000; De Avila & Duncun, 2003). The

storybook intervention was designed to engage children in shared storybook sessions in English

followed by sessions in which vocabulary was trained. This instruction took place for 15-20

minutes a day, 3 days per week for 4 weeks. A new book was used each week. Each child

received two weeks of English-only intervention and two weeks of Spanish-only intervention.

At the end of each week, vocabulary probes were administered in both English and Spanish to

assess expressive (word definitions; naming) and receptive knowledge (pointing) of the target

vocabulary. The probes represented proximal measures of actual vocabulary targets taken from

the stories.

Results revealed that children made significant improvements in demonstrating expressive and receptive knowledge of target vocabulary, particularly if they demonstrated high Spanish and low English (HS-LE) proficiency scores prior to beginning the intervention program. Children with limited skills in Spanish showed significantly less vocabulary growth than those with strong Spanish language skills suggesting that this may be an important factor in deciding whether or not to attempt instruction in English vs. Spanish.

The present study incorporated aspects of previous studies that used narrative contexts to teach vocabulary to children learning English as a Second Language. First, we incorporated repeated and varied encounters with vocabulary words in the context of stories (Beimiller & Boote, 2006). We hypothesized that the use of wordless picture books may direct students' attention more fully to the oral language content in the stories than printed books and increase the likelihood that they would use more story elements and complex language (Isbell et al., 2004). Therefore wordless books were used in this study. The level of language proficiency that

a child demonstrated in their native language (Spanish) has been shown to be associated with the likelihood that they would experience gain from an intervention provided in English (Neris, Jackson & Goldstein, 2010). To explore this variable, we recruited children who varied in their native language proficiency.

The purpose of this study was to examine whether vocabulary instruction to improve cognitive academic language in a narrative-context using wordless picture books was associated with greater improvement than traditional ELL and classroom-based instructional practices (standard practice). We also wanted to explore the relationship between native language proficiency (measured using recalling sentences and UALPA classification) and intervention outcomes.

Method

Participants

Eighteen elementary school-age children participated in this study. They ranged in age from 7;4 to 12;1 years old. Participants attended Midway Elementary School in Midway, Utah and were English Language Learners, Spanish being their first language. Children were randomly assigned to a standard practice group (n = 9, average age=112.89 months, SD=15.09 months) or narrative language intervention group (n = 9, average age=106 months, SD=17.10 months). Children were assigned a level of English language proficiency by the public schools using the Utah Academic Language Proficiency Assessment (UALPA). This test is administered by the ESL coordinator and assesses English language proficiency in four modalities: listening, speaking, reading, and writing. Each modality constitutes a subtest that yields percentages and a total language score. The scores are used to assign each child an English proficiency classification of pre-emergent (0-25%), emergent (25-50%), intermediate (50-75%), or advanced

(75-100%). In the standard practice group, 4 children were classified as emergent, 4 as intermediate, and 1 as advanced. In the narrative intervention, 2 children were classified as emergent and 7 as intermediate.

Procedures

All students were given language and narrative assessments in English and Spanish before and after participation in the intervention. Children were given the recalling sentences subtest of the Clinical Evaluation of Language Fundamentals-4 in English (CELF-4; Semel, Wiig, & Secord, 2003) and Spanish (CELF-4-Spanish Edition; Semel, Wiig, & Secord, 2006). This subtest yields information about a "student's ability to (a) listen to spoken sentences of increasing length and complexity, and (b) to repeat the sentences without changing the words meanings, inflections, derivations or comparisons, or sentence structure" (Semel, Wiig, and Secord, p. 25). The inability to imitate sentences has been used to discriminate between typical and disordered language development (CELF Reference Manual; 2006).

The Test of Narrative Language (TNL; Gillam & Pearson, 2004) was administered in English before and after intervention. This assessment measures the ability to comprehend and produce stories that consist of episodes and sequences in three different formats: (a) scripts with no picture cues (subtest 1), (b) sequenced pictures (subtests 2 and 3), and (c) single pictures (subtests 4 and 5) (Gillam and Pearson, 2004).

Children were also given a prototype of the Test of Narrative Language in Spanish. Each subtest on the TNL-Spanish was designed to be parallel to a subtest on the TNL-English. For example, the first subtest, Vamos a la Tienda (We're going to the Store), was a script with no picture cues, subtest 3, El Perro Travieso (The Naughty Dog), was presented through sequenced pictures, and subtest 5, El Unicornio (The Unicorn), was a single picture description task.

Because the TNL-Spanish is a prototype, raw scores were calculated for each subtest and combined to create an overall score. Both TNL measures include a number of items related to the use of CALP in the form of vocabulary, syntax, and story grammar elements (character, setting, actions, endings, etc.).

Children were asked to generate their own story in English while looking at the wordless picture book entitled, "One Frog Too Many", (Mercer Mayer, 1988). This book contains a series of pictures depicting the adventures of a frog and a boy. First, the clinician showed the child the pictures so that (s)he could recognize actions and events and mentally begin to prepare a story. The book was presented again and the child was asked to tell a story using the pictures.

Scoring procedures. Stories from the TNL (English and Spanish) and the wordless picture book were recorded with a Sony digital voice recorder. This recorder was placed on a table separating the examiner from the child or held by the child near his/her mouth. The recordings were uploaded onto a secure server and transcribed using the Systematic Analysis of Language Transcripts (SALT) software (Miller and Iglesias, 2002). Each story was segmented into Communication units (C-units). A C-unit was defined as an utterance that contained an independent clause and its modifiers. Reliability for transcription of the samples was performed by two trained raters and was 98%. All transcripts (oral narration subtests Late for School and Aliens on the TNL, and the stories children produced using the wordless picture book) were analyzed using SALT conventions and yielded measures for mean length of utterance (MLU), total number of words (TNW), total number of different words (TDW), and length of story (in Cunits). The stories (Alien and Frog stories) were also analyzed using the scoring scheme from the TNL for subtest 5 (Appendix A). The percentage of grammatical utterances was calculated by

hand for each transcript. The first author coded all of the transcripts for grammaticality. The second author re-coded 20% of the data. Reliability for coding grammaticality was 90%.

Further analysis of cognitive academic language features was conducted using a progress monitoring tool (Tracking Narrative Language Progress TNL-Pr; Gillam & Gillam, 2010) portions of which are shown in Appendix B. The TNL-Pr is a progress-monitoring tool that was developed to chart progress in macrostructural (story elements) and microstructural (vocabulary, syntax) elements of stories. Seven story elements (macrostructure) were coded on a scale of 0-3 including character (agents performing actions), setting (time or place), initiating event (problem or event that motivated the character into action), internal response (feelings of characters with regard to the initiating event), plan (stated intention to solve a problem using words such as "thought," or "decided"), attempt (actions related to the initiating event), and consequence (successful or unsuccessful resolution of the problem or event that started the story). Each element was coded as 0 if it was not present; 1 if the element was present but ambiguous (e.g., character was indicated by ambiguous pronouns); 2 if one example of the element was present in a specific way (e.g., character was indicated using a name), and 3 if more than one specific instance of the element was noted (e.g., two character names).

Microstructure elements included conjunctions, (e.g., coordinating, temporal, causal), mental/linguistic verbs (e.g., said, thought), adverbs, and elaborated noun phrases. The number of different verbs, adverbs, and noun phrases the child used determined the score the child received (0-3). However, for conjunctions the scoring system awarded coordinating conjunctions 1 point, temporal conjunctions 2 points and causal conjunctions 3 points according to a developmental hierarchy from simple to more complex (see scoring form in Appendix B).

Criterion validity for the TNL-Pr was calculated with the TNL NLAI (total narrative language composite) using a Pearson Product Moment Correlation Coefficient and was r=.71. The correlation between the TNL-Pr scores and the oral language composite was slightly higher at r=.75. Inter-rater reliability, calculated on 10% of the data for each group by two independent, trained raters, was 88%.

Intervention Approaches

Narrative intervention: A prototype of The Functional Language Intervention Program for Narratives (Narrative Intervention Program; Gillam & Gillam, 2008) was implemented. Children were expected to learn and practice new concepts, words, sentence structure, and story grammar elements in the context of stories. The stories consisted of original, non-published wordless picture books. The story grammar elements, microstructure elements, and lexical diversity were all taught throughout three phases of the intervention. Initial education and discussion of these areas was presented in the first phase, elaboration and application was taught in the second phase, and the third phase focused on developing stories through story retells. The first 12 lessons in the first phase focused on story grammar elements. Children were taught to use graphic organizers that contained icons, that represented eight story grammar elements (character, setting, take-off, feelings, action(s), complication, landing, wrap-up) to produce stories. See Appendix C for an example. After story grammar elements were taught, a vocabulary unit was presented that focused on the child's understanding of the vocabulary that had been developed during the first part of the program. Next, a section was dedicated to microstructure instruction with exposure to elaborated noun phrases through the use of examples, pictures, and practice (e.g., showing two pictures of two girls and have a child explain the picture they want, Guess Who, etc.). Finally, another vocabulary unit was presented to evaluate the

child's understanding of the vocabulary presented throughout the whole phase.

English as a Second Language was *Words Their Way* (Bear, Invernizzi, Templeton, & Johnston, 2008). This program was designed to strengthen students' vocabulary and word-recognition skills by providing the children hands-on learning experience by sorting words and pictures into specific categories (e.g., concepts, letters, syllables, etc.). *Words Their Way* focuses on 'word study' consisting of "hands-on activities that mimic basic cognitive learning processes: comparing and contrasting categories of word features and discovering similarities and differences within and between categories." During word study, pictures are sorted requiring the child to "examine, discriminate, and make critical judgments" about the sounds in the word, spelling patterns, and word meanings. Children in each group received instruction in phonics (i.e., comparisons of speech sounds; consonant blends; etc.), vowel productions (i.e., long versus short vowels; vowel diagraphs such as aw and au; diphthongs; etc.), word endings, and word patterns (i.e., CVC, CVCV) following the 'word study' activities as presented in the manual.

The school-based English Language Learner (ELL) teacher administered both programs in English. Children in both groups were seen 30-45 minutes per day, four days a week for a total of six weeks in groups of three or four.

Results

Two-way mixed ANOVAs were performed on each of six dependent measures to determine whether vocabulary instruction to improve cognitive academic language (literate language) in a narrative-context using wordless picture books was associated with greater improvement than traditional ELL and classroom-based instructional practices (standard practice group): the TNL Narrative Language Ability Index (NLAI) score, total number of different

words, percent of grammatical utterances, story grammar score, vocabulary score, and microstructure. In each analysis, the between-subjects factor was Group (Standard Practice vs. Narration) and the within-subjects factor was Time (pretest vs. posttest). The Time main effects and the Group x Time interactions were tested using the multivariate criterion of Wilks' Lambda (Λ). The data are presented in Table 1. For the overall measure of narrative ability (NLAI), there was a main effect for Time, F (1,16) = 10.49, p < .01, partial eta squared = .396, in which the posttest performance significantly exceeded the pretest performance. Neither the Group main effect nor the Time x Group interaction reached significance. As seen in Figure 1, both groups had higher TNL NLAI scores after intervention than before intervention. The slope for the Narrative group was greater than that for the Standard Practice group, but the differences between the two slopes did not reach significance.

Insert Figure 1 Here

Similar results of a main effect for Time were found for the measures of lexical diversity (F(1,16)=4.61, p<.01, partial eta squared=.224), grammaticality (percent of grammatical utterances; Time, F(1,16)=15.59, p<.01, partial eta squared=.493), and for microstructure elements (F(1,16)=33.89, p<.01, partial eta squared=.679), in which the posttest performance significantly exceeded the pretest performance and improvement was made with intervention. Figures 2, 3, and 6 show that the slope for the Narrative group was greater than that for the Standard Practice group, but the differences between the two slopes did not reach significance. The same results of a main effect for Time were found for story grammar elements (F(1,16)=7.02, p<.01, partial eta squared=.305) and item analysis coding for vocabulary (F(1,16)=8.11, p<.01, partial eta squared=.336) where neither the Group main effect or the Time x Group interaction reached significance. As seen in Figures 4 and 5, the slope for the Narrative group

was much greater and started lower than that for the Standard Practice group, but the differences between the two slopes did not reach significance.

Insert Figure 2 Here

Insert Figure 3 Here

Insert Figure 4 Here

Insert Figure 5 Here

Insert Figure 6 Here

We were also interested in the relationship between native language status and outcomes. We employed visual inspection of the data to explore these relationships for one aspect of cognitive academic language proficiency; use of microstructural elements (TNL-Pr) in stories. We examined pre-intervention native language status using the recalling sentences subtest and post intervention performance on the microstructure section of the TNL-Pr. Participants N2, N3, N5, N6 and N7 (see Table 4) demonstrated the lowest scores on the recalling sentences subtest of the CELF-4 (Spanish) at pre-test and also scored the lowest on the TNL-Pr items measuring microstructure at post-test (\leq 9). No participant in the standard practice group scored higher than 9 on the microstructure portion of the TNL-Pr and there did not seem to be a clear relationship between native language proficiency and outcome for this group of participants. There were no clear relationships between pre-intervention English or Spanish language proficiency as measured using the CELF-4 and other variables (e.g., vocabulary, syntax, story grammar).

There were no clear relationships between UALPA classifications (advanced, intermediate, emergent) and scores on the recalling sentences (RS) subtest of the CELF-4 (English) at pre-intervention (See Table 3 and 4) particularly for children in the narrative group. For example, 2 children in the narrative group were designated by UALPA at the emergent

language level and received scaled scores of 2 and 1 on the English RS subtest. A total of 7 children were designated at an intermediate language level (UALPA). Two of the children classified as intermediate English language learners received similar scores as those designated at the emergent level (scaled scores of 1 or 2). Three of the remaining seven received scores ranging from 3 to 4, with only two children (N1 and N3) scoring within the typical range (≥7). For the group of children who participated in the standard practice group, 4 were classified as emergent English language users and received scaled scores of 1 on the RS subtest of the CELF-4. Only one of the four participants characterized as intermediate English language users scored within the typical range (>7) while the other three received scores of 1, 5 and 6. The participant designated as an advanced English language user scored a 7.

Discussion

A key finding of this feasibility study was that both instructional methods were associated with gains in cognitive academic language proficiency. Statistically, there were no significant differences between the gains of children receiving either instruction. However, children who received instruction in the narrative context appeared to demonstrate a steeper learning curve for all of the variables of interest when compared to the children who participated in the standard practice instruction. This suggests that further investigation of instruction provided in narrative contexts is warranted with children who are ELL. In addition, the data suggest that further investigation into the notion of pre-intervention native language status and CALP outcomes as they relate to the use of narrative contexts to teach vocabulary, and how language status is determined using UALPA seems warranted.

Visual inspection of the data regarding the relationship between native language proficiency and intervention outcomes related to the use of conjunctions, elaborated noun

phrases, adverbs and mental/linguistic verbs provided tentative support for research that has shown that native language proficiency may be associated with the ability to profit from narrative based vocabulary instruction provided primarily in English (Neris, Jackson and Goldstein, 2010). There were no clear relationships between pre-intervention English or Spanish language proficiency as measured using the CELF-4 and other variables (e.g., vocabulary, syntax, story grammar).

Interestingly, there also did not seem to be a clear relationship between the UALPA classifications and scores on the recalling sentences (RS) subtest of the CELF-4 (English) at pre-intervention. Performance on the recalling sentences subtest and one's level of linguistic proficiency in terms of UALPA may not be a reasonable comparison due to possible limitations of UALPA testing and accurate scores or amount of exposure the child had with their primary language. However, it would seem that there would be some correlation between the two measures.

The study was conducted in an exploratory fashion, in an authentic school-based context to determine whether more rigorous studies of narrative based instruction for improving CALP was warranted. Thus, there are a number of design limitations that make generalizations of our findings inappropriate. Most importantly, there were a small number of participants, and the same teacher conducted both interventions. Thus, there is little doubt that intervention contamination occurred. This may explain, in part, why the gains made by children in the narrative group, although steeper in nature, did not reach statistical significance. Follow-up studies should recruit different teachers to implement the different interventions and incorporate methodological controls for intervention contamination. However, the findings provide suggestive evidence that the narrative intervention approach for improving CALP is appropriate

for further exploration under more rigorous conditions for children learning English as a Second Language.

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Tables

Table 1

Dependent Variable Means and Standard Deviations

-		Gre	oup	
Dependent	Standard	Practice	Narr	ative
Variable	Pre	Post	Pre	Post
TNL NLAI	M 61.67	66.67	68.00	76.33
INL NLAI	SD (12.97)	(14.81)	(16.97)	(13.54)
Total # Different	77.78	88.78	85.44	103.67
Words	(32.53)	(33.27)	(53.98)	(46.52)
% Grammatical	47.78	59.11	54.61	63.67
Utterances	(23.59)	(23.09)	(23.45)	(17.05)
Stomy Crommon	3.78	4.44	3.33	5.56
Story Grammar	(3.19)	(2.19)	(2.35)	(2.24)
Va aa hydawy	5.45	6.00	4.67	6.78
Vocabulary	(2.79)	(2.29)	(1.94)	(1.09)
N.C.	5.00	6.67	5.67	8.00
Microstructure	(2.24)	(2.45)	(3.16)	(3.08)

Table 2

Correlations Among Descriptive and Dependent Variables

	TNL NLAI		TDW		% Grammatical Utterances		Story Grammar		Vocabulary		Microstructure	
•	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
CELF English Pre	.72*	.67*	.59*	.41	.74*	.80*	.65*	.34	.41	.43	.40	.27
CELF English Post	.55	.54	.58	.38	.75*	.72*	.62*	.43	.51	.56	.49	.35
CELF Spanish Pre	16	18	.19	.25	12	32	.08	.22	.35	.03	.35	.39
CELF Spanish Post	.01	05	.33	.29	.12	10	.37	.33	.55	.14	.44	.37

^{*} p < .005

Table 3
Standard Practice Group Individual Scores Pretest

Participant	Age	Language	CELF	CELF	Vocabulary	Syntax	Story	TNL	Micro	Percent	Length of
- urticipunt	(in months)	Level*	English	Spanish	v occioniai y	Буппал	Grammar	NLAI	1111010	Grammatical	Narrative
S1	115	A	7	11	7	10	5	70	5	70.5	35
S2	105	I	5	7	9	9	9	73	5	57.5	46
S3	99	E	1	12	5	9	3	61	6	14.0	25
S4	89	E	1	11	1	0	0	46	0	50.0	1
S5	126	I	1	17	6	4	1	58	7	43.0	47
S6	96	I	6	5	6	10	7	82	6	68.5	84
S7	123	E	1	11	8	2	3	49	7	23.0	38
S8	137	E	1	6	1	5	0	46	3	23.5	35
S9	119	I	7	11	6	9	6	70	6	80.0	53

^{*} A=Advanced, I=Intermediate, E=Emerging

CELF scores are the scaled scores for the Recalling Sentences Subtest

Standard Practice Group Individual Scores Posttest

Participant	Age	Language	CELF	CELF	Vocabulary	Cyntox	Story	TNL	Micro	Percent	Length of
rarticipant	(in months)	Level	English	Spanish	Vocabulary	Syntax	Grammar	NLAI	MICIO	Grammatical	Narrative
S1	115	A	8	10	7	9	4	82	9	89.0	46
S2	105	I	5	8	8	5	7	85	6	69.5	83
S3	99	E	1	8	6	8	4	70	9	33.0	67
S4	89	E	1	10	1	6	0	46	1	50.0	2
S5	126	I	4	12	8	6	6	64	8	46.5	53
S 6	96	I	7	9	6	8	4	76	6	89.0	60
S7	123	E	1	12	6	6	5	55	8	30.5	42
S8	137	E	1	3	4	9	3	46	6	45.5	33
S9	119	I	9	12	8	10	7	76	7	79.5	55

Table 4

Narrative Group Individual Scores Pretest

Participant	Age (in months)	Language Level	CELF English	CELF Spanish	Vocabulary	Syntax	Story Grammar	TNL NLAI	Micro	Percent Grammatical	Length of Narrative
N1	96	Ι	7	9	6	11	5	100	9	75.5	50
N2	119	I	1	8	2	0	0	46	0	0.0	2
N3	100	I	8	5	3	9	2	73	5	68.5	63
N4	113	E	2	11	4	6	5	55	7	68.5	53
N5	91	I	4	4	3	5	0	55	2	45.0	30
N6	94	I	2	8	6	10	4	76	6	69.5	31
N7	93	I	3	6	4	8	4	70	7	53.0	45
N8	144	I	4	16	8	7	7	82	10	67.5	122
N9	104	E	1	10	6	7	3	55	5	44.0	14

^{*} A=Advanced, I=Intermediate, E=Emerging

CELF scores are the scaled scores for the Recalling Sentences Subtest

Narrative Group Individual Scores Posttest

Dartiainant	Age	Language	CELF	CELF	Vaaabulam	Cymtox	Story	TNL	Micro	Percent	Length of
Participant	(in months)	Level	English	Spanish	Vocabulary	Syntax	Grammar	NLAI	MICIO	Grammatical	Narrative
N1	96	I	5	9	6	8	8	88	11	71.0	50
N2	119	I	1	9	5	3	2	46	2	25.0	9
N3	100	I	6	4	7	7	2	82	5	72.0	37
N4	113	E	4	13	8	6	6	73	10	70.5	61
N5	91	I	3	4	8	6	6	73	6	78.5	35
N6	94	I	1	8	6	7	6	94	9	69.5	135
N7	93	I	5	7	7	7	5	76	8	66.0	32
N8	144	I	2	12	6	6	7	82	11	74.0	112
N9	104	E	4	11	8	3	8	73	10	46.5	64

Figures

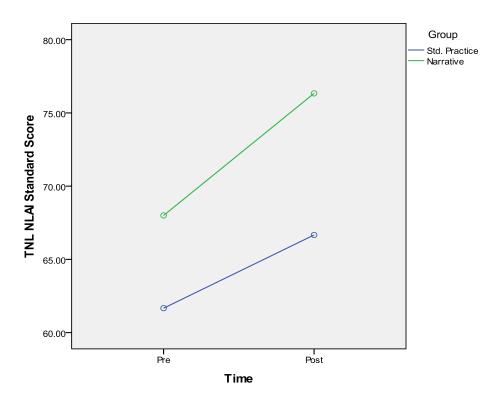


Figure 1. TNL NLAI score comparisons between Narrative and Standard Practice intervention groups.

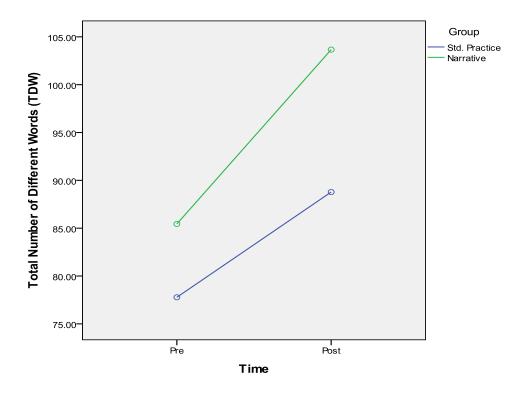


Figure 2. Total number of different words comparisons between Narrative and Standard Practice intervention groups.

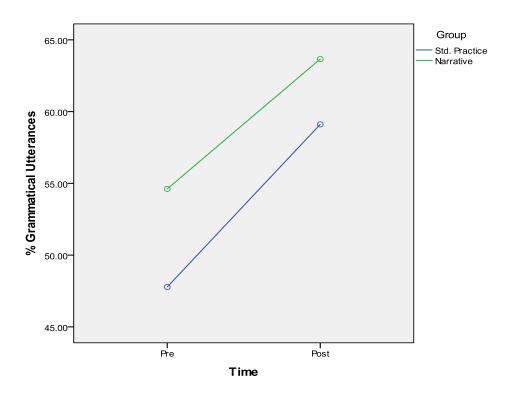


Figure 3. Comparisons of percent grammatical utterances between Narrative and Standard Practice intervention groups.

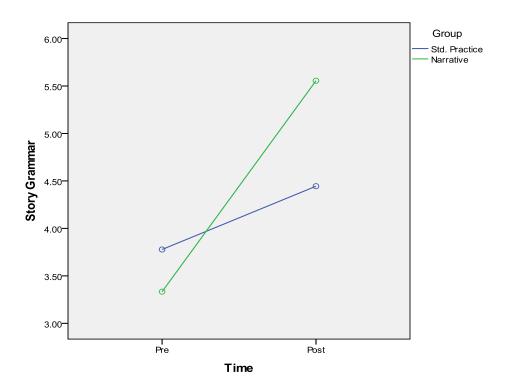


Figure 4. Comparisons of story grammar elements between Narrative and Standard Practice intervention groups.

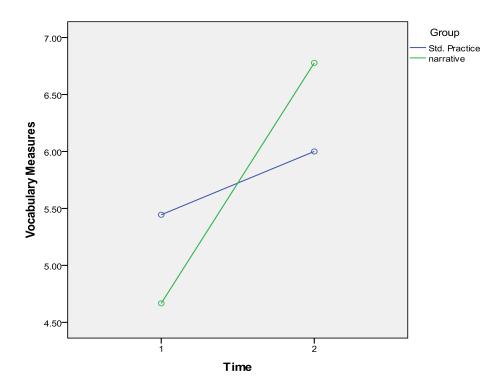


Figure 5. Vocabulary measure score comparisons between Narrative and Standard Practice intervention groups.

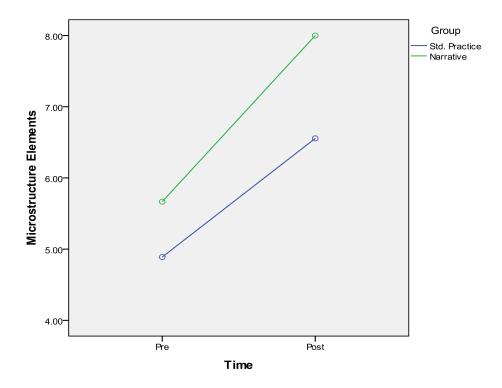


Figure 6. Microstructural element comparisons between Narrative and Standard Practice intervention groups.

Appendix A

TNL Aliens Story scoring scheme

Task 6: Aliens Story

Directions: Present the aliens picture and say to the child, Now, I'm going to show you a picture. I want you to look at it carefully and think of a story to tell. Remember that stories have a beginning, things that happen, and an ending. Try to tell the best story you can. You can start any time you are ready.

Allowable Probe: Say to the child, How does this story start?

Scoring: Circle the appropriate score.

Setting

- 1. States where the story occurs
 - 0 No location information
 - 1 General information (e.g., in a park)
 - 2 Names the location (e.g., in Dallas, in Pease Park)
- 2. States when the story occurs
 - 0 No information about time
 - 1 General information (e.g., once upon a time, one afternoon, one day)
 - 2 Specific information (e.g., on Tuesday, on May 10, last week)

Characters

- 3. Identifies the humans
 - 0 No stated referent for the boy or the girl (e.g., refers to the girl only as "she" or "her")
 - 1 General reference (e.g., the boy or the girl)
 - 2 Gives the boy or the girl a specific name (e.g., Carlos, Sally)
- 4. Identifies the aliens
 - 0 No stated referent for the aliens (e.g., refers to the aliens only as "they," "him," or "her")
 - 1 General reference (e.g., a space family, a bunch of aliens, space creatures).
 - 2 Gives one or more of the aliens a specific name (e.g., Wojokems, Fred)
- 5. Includes dialogue
 - 0 No dialogue
 - 1 Dialogue for one character (e.g., Sally said, "Look at those aliens!")
 - 2 Two characters talk to each other (e.g., Sally asked, "Do you think they're mean?" "No," Carlos said, "They just want to find out about Earth.")

Story Elements

- 6. Indicates a problem, conflict, or an event that motivates the boy or girl to act
 - 0 No problem, conflict, or complication to set the story in motion
 - 1 Vague or incomplete statement of a problem, conflict, or complication
 - 2 Complete statement of a problem, conflict, or a complication that requires action by one or more characters
- 7. Actions and events
 - 0 The main characters engage in no actions or events
 - 1 The actions or events are out of logical sequence or critical actions or events are omitted
 - 2 Two or more actions or events are related to solving the problem, conflict, or complication
- 8. Indicates temporal relationships between actions or events
 - 0 No time relationships stated
 - 1 Uses "and" or "then"
 - 2 Uses one or more adverbial phrases or clauses to link actions or events (e.g., After she saw the spaceship ..., All of a sudden ..., Right when the spaceship landed ...)

(continued)

- 9. Indicates causal relationships between actions or events
 - 0 No causal relationships are stated
 - 1 One causal relationship is stated (because, so that, since, in order to—e.g., The girl ran up to the aliens because she wanted to meet them.)
 - 2 Two or more causal relationships are stated
- 10. Consequence or resolution
 - O No consequence or resolution to a problem, conflict, or complication
 - 1 Unclear consequence or resolution to a problem, conflict, or complication
 - 2 Clear resolution to problems, conflicts, or complications
- 11. Provides an ending
 - O Does not state a reaction or ending
 - 1 States a general reaction or ending (e.g., Everyone lived happily ever after. Or The end.)
 - 2 States a detailed reaction or ending (e.g., The aliens took off and never came back. Or The aliens decided to live on Earth forever. Or Sally was glad she got to know the alien family.)

Vocabulary and Grammar

- 12. Describes objects
 - 0 Fails to name or describe any objects in the picture
 - 1 Names at least one object in the picture (e.g., the spaceship, the suitcase, the picnic table, bushes)
 - 2 Uses adjectives (color, shape, size, number) to describe one or more objects (pictured or made up)
- 13. Reference
 - 0 Two or more nonspecific pronouns (him, her, them) without indicating who is being talked about
 - 1 One nonspecific pronoun without indicating who is being talked about
 - 2 Consistent references to the characters—no confusion
- 14. Uses the same tense throughout the story
 - 0 Changes tense two or more times
 - 1 Changes tense once
 - 2 Same tense throughout the story
- 15. Uses grammatically correct sentences
 - 0 Three or more grammatical errors
 - 1 One or two grammatical errors
 - 2 No grammatical errors

Story

- 16. Story makes sense
 - 0 Two or more statements do not make sense with reference to the story
 - 1 One statement does not make sense with reference to the story
 - 2 All statements make sense
- 17. Story is complete, creative, and well organized
 - 0 Incomplete story or story that is poorly organized (uninteresting and incoherent)
 - 1 Complete story with no creative elaboration
 - 2 A complete story with an integrated story line, elaboration, humor, surprise, or some other creative element

ż							
L	Total	(34)	for	Task	6:	Aliens	Story

Appendix B

TNL-Pr scoring sheet

Tracking Narrative Language Progress (TNL-Pr)

Gillam & Gillam (2009)

Story Grammar Element	Description	Examples	Description	Examples	Description	Examples	Description	Examples
Character Salt Code = CH	O Points: No main character is included, or only ambiguous pronouns are used.	They were walking. She and him were walking.	1 Point: Includes at least one main character using nonspecific labels (pronouns, nouns) WITH a determiner ("the" or "a").	Once there was a boy walking. The boy was walking.	2 Points: Includes at least 1 main character using a "name" for the character. Note: Only code each character one time.	Once there was a boy named Charles.	3 Points: Includes more than 1 main character using specific "name".	There was a boy name <u>Charles</u> , a girl named <u>Connie</u> , and a mom named <u>Jody</u> .
Setting Salt Code = S	0 Points: No reference to a specific or general place.	The boy and the girl were walking.	1 Point: Includes reference to a general place and/or time.	They boy and the girl were outside.	2 Points: 1 or more references to specific places or times in the same story.	Once there was a boy and a girl walking in Central Park.	3 Points: Includes 2 or more references to specific places or times (in the same story).	Once there was a boy and a girl walking in Central Park. They lived in Logan.
Initiating Event Salt Code = IE	O Points: A problem or "starting" event is not stated.	The girl looked at the boy. The boy and the girl were walking the park. The boy is next to a car. There is a tree.	1 Point: Includes at least one event or problem that does not elicit an action from the character.	A spaceship landed in the park (potential initiating event). There were aliens laughing and a dog running and a table and(no action/attempts related to potential IE).	2 Points: Includes at least one event or problem that elicits an active response from the character(s).	A spaceship landed in the park (IE). The girl ran (A) out to say "hi" to the aliens.	3 Points: 2 or more IE's in one story (complex episode).	A spaceship landed in the park (IE). The girl ran (A) out to say "hi" to them. They became friends (C). Then, the spaceship caught on fire (IE). They ran to get some water.

Internal	0 Points:	The girl and	1 Point:	The boy saw a	2 Points:	The	3 Points:	The spaceship
Response	There are no	the boy saw	Words are	spaceship land	The	spaceship	Two or more	landed, The girl
	feelings,	the aliens	used that	in the park	feelings,	landed	feelings,	was excited to
Salt Code = IR	desires, or	lands and	describe	(IE). There	desires, or	(IE). The	desires, or	meet the aliens.
	thoughts	they ran out	feelings that	was a happy	thoughts of	girl was	thoughts of	She was <u>happy</u>
	explicitly	to meet	are <u>not</u>	dog.	the	afraid (IR)	the character	when they
	stated, or they	them.	directly		character	of meeting	are	greeted her
	do not relate		related to		are	the aliens.	explicitly	nicely.
	to the		the IE.		explicitly		stated and	
	initiating				stated and		related to the	
	event.				relate to the		<u>IE</u> .	
					<u>IE</u> .		(2 or more	
					(0)		stated IRs).	
					(One state			
Diam	A D. L. A. NI.	The aliens	1 Point:	T1 11	IR)	TI.	3 Points:	The allows
Plan	0 Points: No	landed. The	Use of	The girl decided to	2 Points: There is a	The	There are 2	The aliens landed. The
Salt Code = P	statement is provided		cognitive or			spaceship landed	or more	
San Code – P	about the	girl ran out to meet	mental state	have a picnic with her	statement about how	(IE). The	statements	girl <u>decided</u> to go meet them.
	character's	them.	verbs NOT	brother.	the	aliens ran	about how	She ran over
	plan to solve	tileiii.	related to	brother.	character	out (A).	the	and said, "Hi."
	the problem.		how the		may react to	The girl	characters	The boy
	the problem.		character		the IE. The	thought	may react to	thought he
			may react to		statement is	(P) it	the same or	would sneak
			the IE. The		directly	would be	different (if	away. He went
			statement is		related to	neat to	complex	home and no
			NOT		the IE.	meet the	episode) IEs.	one saw him
			directly			aliens.		go.
			related to		Key Words:			
			the IE.		wanted,			
					thought,			
					decided			
					pondered			
					considered			
Action/Attempt	0 Points: No	There is a	1 Point:	The spaceship	2 Points:	The	3 Points:	The aliens
	actions are	girl. There	Actions are	landed. The	One or more	spaceship	The addition	landed in the
Salt Code $=$ A	taken by the	is a boy. It	taken by the	boy and the	actions is	of aliens	of a	park (IE). The
	main	is sunny.	main	girl were going	taken by the	landed in	complicating	girl wanted to
Note: Cognitive	character(s)		character(s)	to the park.	main	the park	action that	be there friend
state verbs NOT	(no action		that are not		character(s)	(IE). The	interferes	(P). She walked
included	verbs		directly		that IS	girl <u>ran</u> out	with the	over to say hi
(thought,	contained in		related to		directly	to meet	character's	(A). <u>They</u>
decided, wanted)	the story).		the IE.		related to	them. She	actions in	snarled at her
	Basically, a				the IE>	went up	response to	(Complication)
	series of		Descriptive			and said,	the IE.	She ran home
	random		actions			"Hi."		to tll her
	descriptions.							parents what
								happened (C).

Consequence	0 Points: No	The						
-	consequence	spaceship						
Salt Code = CO	to the	landed (IE).						
	action/attempt	The aliens						
	related to the	got out (A).						
	IE is	The boy was						
	explicitly	afraid (IR)						
		aliaiu (IK)						
	stated.							
Microstructure	0 Points	No	1 Point:	The girl saw	2 Points:	After the	3 Points:	I am not your
		conjunctions	coordinating	the aliens but	Temporal	aliens	Causal	friend because
		in story	conjunctions	they did not	conjunctions	landed, the	conjunctions	you ate my
			used in story	see her.	used in	girl ran.	used in	cake. Since
			used in story	See Her.	story.	giri ruii.	story.	you did that, I
			[but, so, or		story.	The girl	Story.	am eating your
			-		Γ- Ω	_	[H	
			and]		[after,	saw the	[because,	hot dog.
					before,	aliens	since, so	
					when, next,	while she	that,	
					while, until]	was	therefore, as	
						running in	a result]	
						the park		
N 1/1:	0 D * 4	N	1 D 1 1	Tr. 1	1 2 D 1 1	11	2 D : 4 2	TT 1 '1 14
Mental/linguistic	0 Points	No potential	1 Point: 1	It is hot out	2 Points: 1	Не	3 Points: 2	He <u>decided</u> to
verbs		mental/	potential	here, thought	mental/	decided to	or more	go and meet the
		Linguistic	mental/	the boy.	Linguistic	go and	mental/	aliens. The girl
Salt Code = M/L		verbs.	Linguistic		verb, only	meet the	Linguistic	told him he
			verbs in		active voice	aliens.	verbs, only	was brave.
[thought, said,			active or		and verb		active and	
know, promised,			passive		tenses		verb tenses	
decided, forgot,			voice, in		OTHER		OTHER	
wished, greeted,			any verb		than present		than present	
barked, called,			tense		& present		& present	
asked, wished,			including		progressive.		progressive.	
know, told, etc.]			present &		progressive.		progressive.	
Miow, tota, etc.j			present					
			-					
Adverbs	0 Points	No adverbs	progressive. 1 Point: 1	Sometimes	2 Points: 2	Sometimes	3 Points: 3	The aliens
(non-conjunctive)	J I OIIIES	110 00 000	adverb that	they like to	or more	they like	or more	yelled <u>loudly</u> ,
(non-conjunctive)				watch aliens.	different	to watch	different	"Don't come
Salt Cade -			conveys	waten anens.				
Salt Code =			tone,		adverbs.	aliens but	adverbs.	over here."
ADV			attitude,			the aliens		Surprisingly,
			time,			left		the kids went
[accidentally,			manner that			quickly.		anyway. Then,
quickly, softly,			modify a			1		the aliens left
slowly, etc.]			verb.					quickly.
Elaborated	0 Points	No noun	1 Point: A	The old dog	2 Points: A	The old.	3 Points: 2	The old, black
	I	I 1			1	11111	I	I 1 /1
Noun Phrases		phrase	noun phrase	saw the	noun	<u>black</u> dog	or more	dog saw the

Salt Code = ENP		modifier	contains 2	spaceship.	phrases that	spaceship.
	The dog saw	that	or more		contain 2 or	
	the alien	precedes the	modifiers		more	
	spaceship.	noun.	that precede		modifiers	
			a noun.		that precede	
					a noun.	

Greenhalgh Strong (2001); Hughes, McGillivray, & Schmidek (1997); Petersen, Gillam, & Gillam (2008).

Appendix C

Narrative Intervention Example











The icons (shown above) were individually presented and the children were told what each one meant. With each icon, there was a script presented for the ELL teacher to use. They first would introduce the icon, explain what it meant, explain how it is used in a story, ask questions to determine the child's comprehension, and then summarize. The first icon that was introduced was the "Character" icon. The script went as follows:

Character: Show each icon to the child, label it, and describe what each one stands for.

Start with the character icon.



Say: This is an "icon" or a "symbol" for the characters in our story. Remember, an icon or symbol is something that stands for something else. This will help us to remember to include characters in our story (write the word character on the board and have children write it on an index card). The character can be a person, an animal, a toy like in the movie "Toy Story" or even an appliance or a car. [Have children talk about this definition for character, person, animal, toy, appliance, car and whatever else they come up with]. We can have as many characters in our story as we like and most characters have a name.

Ask:

- Can you think of some characters that are people [Answer: boy, girl, queen, Cinderella, Jose', mom].
- Can you think of some characters that are animals [Answer: bear, cat, mouse, moose]
- 3. Can you think of some characters that are toys [Answer: doll, rocking horse, teddy bear, soldier, or whatever they come up with]
- 4. Can you think of some characters that are appliances or cars [Answer: teapot (like in Beauty in the Beast), a car or truck (like in Cars), a toaster (like in the Brave Little Toaster), salt and pepper shakers (like in Blue's Clues).

Summarization review questions: (Note-when children do not respond correctly, give them the answer, and ask the question again until they respond with the correct answer. Try to make sure that all children answer the question, even if they have to repeat it after each other)

- 1. Hold up the character icon and ask, "What is this icon called?" [a character]
- 2. Tell me who or what can be a character [a person, an animal, or a toy]
- 3. How many characters can a story have? [as many as we like]
- 4. Do most characters have a name? [yes]

Each icon was than individually presented and similar scenarios and questions were asked until comprehension of the symbol was accurate.

After the icons were introduced they were taught in the context of a story. The children looked at a wordless picture book while the ELL teacher told them the story while pointing to the pictures as they went, using the icons. For example, the teacher begins the story saying, "The

boy," stopped and pointed to the icon *character*, "is a character" or "Sleeping by a stream," stopped and pointed to the icon setting, "The stream is a setting in the story." After the story was completed, questions were asked about the story to determine how much the children understood. Once the questions were answered, the children were then each given different icons and asked to build upon each others' stories based on what icon they had in the correct order. More activities were included in this section like story bingo, where one child was asked to tell a story and the other children monitored their story by placing chips on bingo cards with the different icons used as squares, developing stories as a group using an icon grid, and finally telling a story without the use of icons. After this phase was completed, the second phase began where practice, elaboration, and refinement of the story grammar elements was focused on. For example, dialogue, details, names, emotions, cause and effect, and consequences. The same scenario where each icon was introduced and elaborated, listening to and answering questions to stories, creating their own stories based on the icon card they received, icon bingo, group stories, and stories without icons was used. Phase three consisted of Listening and Telling Complete, Elaborate Stories with the same set-up being used to identify and teach each concept.